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ABSTRACT

This monograph examines educational programs for students who are gifted and talented in the visual arts, through a review of the literature on gifted/talented education and art education and examination of programming opportunities. Relevant educational history from 1850 to the present is reviewed. The research review encompasses four national surveys, case studies, and local and regional program evaluations. The paucity of directly relevant research is noted. Various programming opportunities, with descriptions of operating programs, are discussed and grouped into the three general categories of mixed-ability grouping, ability grouping, and acceleration. Nine specific programming options are identified among which are: taking art courses at a college while still in high school; taking Advanced Placement art courses in high school; taking intensive courses in which the curriculum has been compacted; and entering college early. The possibilities of authentic assessment are briefly addressed. Six recommendations address: (1) development of a common vocabulary to describe programming for this population; (2) research on programming effectiveness; (3) large-scale survey research on demographic issues and programming opportunities; (4) evaluation studies of specific program options; (5) more longitudinal research and individual case studies; and (6) standards for reporting evaluation studies. (Contains approximately 125 references.) (DB)

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Programming Opportunities for Students Gifted and Talented in the Visual Arts

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PROGRAMMING
in the ARTS
RESEARCH-BASED DECISION MAKING SERIES

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Dr. Enid Zimmerman is a Professor of Art Education and Gifted/Talented Education at Indiana University, where she also serves as Coordinator of the Art Education Program. Throughout her career, she has engaged in a variety of research and development projects in art education and gifted/talented education, with special attention to issues of multicultural education, women, artistically talented students, teaching art, assessment, and curriculum development. She has contributed numerous articles, book chapters, and co-authored books, including *Art/Design: Communicating Visually*, *Artstrands: A Program for Individualized Art Instruction*, *Educating Artistically Talented Students*, *Resources for Educating Artistically Talented Students*, and *Understanding Art Testing*. She currently is Chairperson of the National Art Education Association's Commission on Research in Art Education.

The authors co-directed Artistically Talented Program, an in-service teacher education program, at Indiana University. For a decade, they co-directed the Indiana University Summer Art Institute for artistically talented students. They are co-principal investigators of *Project ARTS*, a three-year research and development project for rural, underserved students in schools in Indiana, New Mexico, and South Carolina funded by the Jacob K. Javits Gifted and Talented Students Education Act. They remain in close contact with teachers and students in various parts of the country involved with art programs for artistically gifted and talented students in the visual arts at all levels. The authors co-authored the NRC/GT publication, *Issues and Practices Related to Identification of Gifted and Talented Students in the Visual Arts.*

Programming Opportunities for Students Gifted and Talented in the Visual Arts

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ABSTRACT

The major purpose of a visual arts program for artistically gifted and talented students is to bring students together with high interests and abilities in art in ways that will broaden and deepen their knowledge about art, sharpen their art skills, and offer them learning opportunities rarely found in a regular art classroom setting. There have been, however, few studies, and no large-scale or longitudinal studies, directed toward evaluating the effectiveness of programming opportunities for students gifted and talented in the visual arts. As a result, little research is available to guide or direct school-based decision making about programming options for such students. The paucity of current, available research is a deterrent to further progress in efforts to provide meaningful programming options for students gifted and talented in visual arts. Before large-scale research might begin, however, there are many definitional and semantic problems in relation to programming options for gifted and talented arts students that need to be clarified. Many writers have proposed different categories and definitions of programming opportunities for gifted and talented students currently offered by schools across the country. Based on a review of the literature of gifted and talented education, and of art education, categories of mixed-ability grouping, ability grouping, and acceleration as programming opportunities for gifted and talented visual arts students are generated. Examples of nine programming opportunities in each of these categories are offered.

Mixed-ability grouping with in-class enrichment has been used to provide highly able students with a variety of learning situations, materials, and activities that provide depth and breadth learning experiences beyond those offered in a school's regular program. In art education, enrichment has come to mean providing small-group or individualized instruction for high ability students who remain in mixed-ability or heterogeneous classes with their age peers. Another form of mixed-ability grouping, cooperative learning, has become very popular with educators committed to reform or restructuring of schools, although its effectiveness for gifted and talented students has been questioned. Other forms of mixed-ability grouping relevant for students with high abilities in the visual arts include individualized instruction, self-study units, and mentoring.

Definitions of *ability grouping* generally overlap and refer to various means of bringing students together with special and similar needs, interests, and abilities. Advantages of ability grouping for talented art students include a reduced range of individual differences within a group and more opportunities to explore and exchange ideas and pursue advanced study in selected areas than with other student groups. Students in ability groups also are more likely to show significant gain scores on achievement measures. Disadvantages of ability grouping include its cost because specialized teachers, materials, and classrooms may be required. Some critics claim that ability grouping encourages "elitist" attitudes, creates groups that are overly concerned with achievement and competition, and removes from classrooms students whom teachers believe are important to include in mixed-ability groupings.

A frequently cited definition of *acceleration* is progress through an education program at a faster rate or a younger age than the norm. Decades of writers have warned about social, emotional, and other adjustment problems that may result from participation in an acceleration program. A number of educators, however, have reviewed research and practices and concluded that such anticipated social or emotional problems have not been verified and they conclude, therefore, that acceleration is a highly effective intervention option for high ability students.

There is considerable research about programming opportunities for gifted and talented students with high academic abilities. There is a paucity of research, however, about program options for artistically gifted and talented students. Some surveys, case studies, and program evaluation studies about students gifted and talented in the arts are reported in relation to ability grouping and acceleration options for students.

Four national surveys of programs for students with high abilities in the visual and performing arts are reported that offer some descriptive, demographic baseline data. The work of gifted and talented students with precocious abilities in the visual arts also is reported in eight contemporary case studies and these offer a baseline from which future case studies can be contrasted and compared. In addition, research about the effectiveness of ten program options for students gifted and talented in the arts offers a beginning from which other evaluation studies can be compared.

It is concluded that there is no foundation of research findings on which to conduct meta-analysis about programming opportunities for students gifted and talented in the visual arts. There is an obvious need for such a foundation and six recommendations are made to help rectify this situation.

Programming Opportunities for Students Gifted and Talented in the Visual Arts

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EXECUTIVE SUMMARY

Introduction

The major purposes of a visual arts program for artistically gifted and talented students are to bring students together with high interests and abilities in art in ways that will broaden and deepen their knowledge about art, sharpen their art skills, and offer them learning opportunities rarely found in a regular art classroom setting. It has been over twenty years since the Marland Report was issued with a multifaceted definition of gifted and talented students that included *visual and performing arts* as a recognized aspect of giftedness (Marland, 1972). There have been few studies, and no large scale or longitudinal studies, however, directed toward evaluating the effectiveness of programming opportunities or understanding the needs of students gifted and talented in the visual arts. Little research is available, therefore, to direct decision making about programming opportunities for students gifted and talented in the visual arts (Clark & Zimmerman, 1984, 1987a). Some of the best developed sources of information at this time are directed toward intellectually and academically gifted students. Art educators, however, have reviewed that literature and questioned the applicability of research that is not directed specifically toward the needs of students who are gifted and talented in the visual arts (Clark & Zimmerman, 1987a, 1988, 1992). In most classrooms, the needs of atypical students of all kinds are not served adequately, partly because these students need differentiated curricula and programming opportunities designed specifically to serve their unique characteristics, and few voices have been raised to recognize or help meet the needs of students gifted and talented in the visual arts.

Background: 1850 to the Present

Early experiments with accommodation for gifted and talented students began with ability grouping, grade skipping, and flexible promotions. The majority of such programs, however, emphasized education of academically and intellectually gifted and talented students. During the 1920s, two major developments influenced special programs for students with high abilities: the Progressive Education movement and the research of Terman (1925). In the 1930s, the first specialized arts high schools were founded in New Jersey and New York.

There was a renewal of interest in accommodation to the needs of students with high abilities during the 1950s, but only 4% of school districts across the country offered special accommodations for gifted and talented students (Freehill, 1961). By 1976, Wood was able to locate only 22 fine arts high schools in the entire country. During the 1980s and early 1990s, renewed interest in programming opportunities for students talented in the visual arts was expressed in books by Hurwitz (1983), Madeja (1983), Clark and Zimmerman (1984,

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* Both authors contributed equally to this manuscript; their names are listed alphabetically.

1987a), Bachtel-Nash (1984), and Bloom (1985), special issues of two journals (Clark & Zimmerman, 1983, 1991), and in two monographs (Clark & Zimmerman, 1992, 1993). Leonhard, in 1991, reported national survey data relating to available programming options for students gifted and talented in the visual and performing arts.

Programming Opportunities

Programming options for artistically gifted and talented students in the visual arts should be researched to determine which are best suited for educational purposes for different levels of education, a variety of contexts, and differing populations from diverse economic, social, racial, ethnic, and cultural perspectives. There also are definitional and semantic problems that should be resolved in relation to program options for students gifted and talented in the visual arts. Many writers have proposed different categories and definitions of programming options currently being offered. Based upon review of the literature of gifted and talented education and art education, the following outline of programming opportunities for gifted and talented students in general, and in the visual arts, is offered:

I. Mixed-ability grouping, including in-class enrichment, cooperative learning, and individualized instruction (e.g., self-study units and mentoring)
II. Ability grouping, including specialized schools (e.g., magnet schools), special classes in regular school for all of the school day (e.g., classes recruited from one school or classes recruited from several schools), special grouping for part of the school day (e.g., pull-out programs, special courses, released time, clubs, artists-in-residence), and grouping for school-related activities (e.g., field trips, school/museum visits)
III. Acceleration, including grade skipping, early admissions, and rapid progress (e.g., accelerated progress, Advanced Placement, credit by examination).

Mixed-Ability Grouping

In today's climate of inclusion, and other practices based upon natural attendance grouping, mixed-ability grouping is found commonly in schools. This ability grouping can take many forms, however, and includes in-class enrichment, cooperative learning, individualized instruction, self-study units, mentoring, and other forms of adaptation based upon differing abilities and capabilities of students. Many of these mixed-ability groupings are based on having groups of students with differing ability levels work together in shared spaces or on shared projects.

In-class Enrichment

Enrichment has been used to provide highly able students with depth and breadth learning experiences beyond those offered in a school's regular program. An advantage of enrichment is that it provides differentiated education for high ability students in schools not large enough to offer specialized classes. Enrichment is viewed by some as more democratic than ability grouping, although there have been many reservations expressed about enrichment programs (Clark, 1979; Fox, 1979; Grossi, 1980; Renzulli, 1977). What has been called 'enrichment' is simply good education for most students and does not address the needs of gifted and talented students (Grossi, 1980; Renzulli, 1977). In art education, enrichment has come to mean providing small-group or individualized instruction to high ability students who remain in heterogeneous classes with their age peers. Arts classes, in general, often are characterized as offering "enrichment" for all students, but such claims deny the value of art-related learning activities for *all* students and do not attend to the abilities and learning needs of gifted and talented students.

Cooperative Learning

There is ongoing debate in gifted and talented education about the effects of cooperative learning on the education of high ability students. According to Slavin, "cooperative learning refers to classroom techniques in which students work on learning activities in small groups and receive rewards or recognition based on their group's performance" (1980, p. 315). Despite the popularity of cooperative learning programs, Robinson (1991) pointed out that cooperative learning research has not included sufficient numbers of gifted students or investigated programs with established ability grouping to justify claims about its use with gifted and talented students. Rogers (1991) concluded that cooperative learning in mixed-ability groups cannot be shown to be academically beneficial for gifted and talented students. She did acknowledge positive evidence for cooperative learning in regard to acceptance of culturally diverse and academically handicapped students. As an example, a curriculum unit is described about Japanese art, for fourth graders in Fort Wayne, Indiana, that incorporated in-class enrichment and cooperative learning.

Individualized Instruction

There are no agreed upon practices or definitions that clarify the meaning of individualized learning programs for gifted and talented students in schools. Betts and Knapp (1980), Dirkes (1988), and Khatena (1992) described models of individualized learning as methods for meeting the needs of academically gifted and talented students. Arts programs often encourage individualized project definition and individually based "self-expression" outcomes in art activities. Art students with highly developed art skills and knowledge typically are more comfortable than other students with open-ended learning opportunities and problems that "stretch" their knowledge, skills, and abilities.

Self-Study Units

Clark and Maher (1992), Clark and Zimmerman (1987a), and Erickson (1992) have written about collections of learning materials and resources that could be used to help individualize instruction for mixed-ability classes with gifted and talented students in the visual arts. Often, teachers who may want to have students work with self-study units typically do not have time for designing such units or to gather such resources for classroom use. An example of self-study units for artistically gifted and talented students in Worcester, Massachusetts is described.

Mentoring

Mentorship programs offer options for high ability visual arts students considering vocational choices in such work as computer graphics, commercial design, landscape architecture, interior design, or printing. Khatena (1992) described a number of mentoring opportunities for students gifted and talented in the visual arts. A mentorship program in the visual arts in Center Valley, New York is offered as an example of this program option.

Ability Grouping

Students in most elementary school classrooms evidence a wide range of ability levels, in art as in other school subjects, *without* including students with exceptional abilities who would extend that range. The most common adaptation to this diversity among students' abilities has been for elementary classroom teachers to create two or three differentiated ability groups in reading, language arts, and other subjects. Definitions of ability grouping generally refer to means of bringing together students with special and similar needs, interests, or abilities. Kulik (1992) defined ability grouping as "the separation of same-grade school children into groups or classes that differ markedly in school aptitude" (p. ix). Ability grouping can include tracking, regrouping for instruction, cross-grade grouping, within-class grouping, and classes for gifted and talented students (Kulik, 1992). In gifted and talented education, ability grouping has taken many forms, from full-time specialized schools to part-time "pull-out" programs. Rogers (1991) claimed that "it is unlikely grouping itself causes gains; what goes on in the group does" (p. x) and that ability grouping without concomitant curriculum and instructional modification does not produce discernible effects. Kulik and Kulik (1984) established that ability grouping does produce positive attitudes towards subject matters taught, and Kulik (1992) reported that regrouping for special instruction, without adjustments in the curriculum, shows the least effective results.

Advantages of ability grouping include a reduced range of individual differences, and gifted and talented students in ability groups are more likely to explore and exchange ideas, pursue more advanced study in selected areas, and are more likely to show significant gain scores on achievement measures than other student groups. Disadvantages of ability grouping include the need for specialized teachers, materials, and classrooms. Some critics claim ability grouping encourages "elitist" attitudes, creates students too concerned with competition, and removes students from classrooms where teachers believe it is important to include all students in mixed-ability groups.

Clark and Zimmerman (1987a) have listed six categories of ability grouping in the visual arts: (1) nonresidential arts schools, full academic year; (2) residential arts schools, full academic year; (3) extraschool, nonresidential arts centers, full academic year; (4) within-school, nonresidential arts programs, full or partial academic year; (5) residential arts schools, summer programs; and (6) arts programs in museums and other community agencies. Examples are reported of ability grouping programs in Irvington, New Jersey; Interlochen, Michigan; Iowa City, Iowa; and Austin, Texas.

Acceleration

A frequently cited definition of *acceleration* is progress through an education program at a faster rate or a younger age than the norm. Maker (1986) added that rapidly paced materials must meet the needs of students. Decades of writers have warned about social, emotional, and other adjustment problems of students that may result from participation in acceleration programs, but several educators have reviewed research and practices and concluded that such warnings are not founded (Benbow & Stanley, 1983; Daurio, 1979; Fox, 1979; Janos & Robinson, 1985; Marland, 1972; Solano & George, 1976).

Rogers (1991), Stanley (1977), and VanTassel-Baska (1986) contended that acceleration is a highly effective intervention technique that produces substantial academic gains, and improves motivation, confidence, and scholarship, but produces only small gains for socialization and adjustment. Advantages of acceleration are that it requires a minimum of expenditures and permits students to enter their chosen fields earlier than other students. Most acceleration for art students occurs in nongraded groupings for out-of-school programs, although exceptions occur in Advanced Placement programs and in International Baccalaureate programs. An Advanced Placement program in New Trier High School, in

Winnetka, Illinois, is offered as an example of acceleration opportunities for students gifted and talented in the visual arts.

Research About Programming Opportunities for Students Gifted and Talented in the Visual Arts

There is a paucity of research about programming opportunities for students gifted and talented in the arts. Findings of research studies about gifted and talented students in the visual arts will be reported for several ability grouping and acceleration program options through contemporary surveys, case studies, and program evaluation studies.

National Surveys

National surveys of programs for students with high abilities in the visual arts offer demographic baseline data about programming options. Clark and Zimmerman (1984) surveyed 50 elementary and secondary visual arts programs and described summer school, school-museum, magnet school, and public school programs for students gifted and talented in the visual arts. Most art programs reviewed did not report using mixed-ability, in-class enrichment. A variety of forms of ability grouping were cited, including out-of-school activities in museums, summer schools, and Saturday classes.

Bachtel-Nash (1984) conducted an extensive survey reported in a *National Directory of Programs for K-12 Artistically Gifted and Talented Students*. She reported 233 programs, but did not analyze or interpret the data. In 1988, she conducted another survey of 141 program administrators from public and private schools. There were visual arts components in 81% of the programs reported, but only 10.7% of the programs specifically offered visual arts classes. The most popular programming options included visiting artists, field trips, private lessons, and mentorships.

Leonhard reported results of a 1990 to 1991 survey about the status of educational programs for visual and performing arts students across the country. Leonhard's (1991) report revealed that, among 1,326 schools, small middle schools and small secondary schools, art programs might be offered, generally but there were no classes for students gifted and talented in the visual arts. Classes for these students were common only in large secondary schools.

Case Studies

There have been a number of contemporary case studies about talented students who evidenced precocious abilities in the visual arts. Some of these focused on the unfolding of art talent without interference from teachers. Other reports emphasized accelerated programming with deliberate instruction for artistically gifted and talented students.

Gardner (1980) presented a case study of an artistically gifted and talented adolescent whose informal art education was gained in a home environment supportive of the arts. According to Gardner, formal art instruction was limited and did not play a major role in this adolescent's art development.

Robertson (1987) reported a case study of her son's art development from ages 6 to 16. She intimated that formal art instruction might have been an inhibiting, rather than a supportive factor, in her son's development. She claimed that art teachers need to focus on adolescents' art expression through popular culture rather than stressing traditional models of instruction.

In Goldsmith's (1992) case study of Wang Yani, a Chinese painting prodigy, she discussed this child's art development from ages 3 to 12. Yani was greatly influenced by her father, a painter, who did not want Yani to have formal art instruction. He guided her development, however, and gave her free reign of his art studio to experiment and paint.

Golomb (1992) described three case studies of Israeli children she considered gifted young artists. She conducted interviews with students, studied students' drawings, and interviewed a parent and a teacher. Golomb concluded that the philosophy of the teacher of two of these children, that visual arts development will proceed without directive instruction, was instrumental in the students' developmental histories.

Bloom and his associates (1985) reported processes by which talented individuals reach high levels of accomplishment before the age of 35. The authors sought information about developing talents with retrospective accounts of people who had demonstrated very high levels of achievement and of those who helped them. Sloane and Sosniak (1985) reported in regard to sculptors in the study, that program opportunities in their elementary schools included a variety of out-of-school options, but did not include regularly scheduled art classes. They concluded that the sculptors had "little experience with the study of art and an equally limited idea of what such study might include" (p. 116).

Wilson and Wilson (1980) studied the art development of a 15 year old and credited his teacher with encouraging and nurturing his art talent by stressing popular, narrative drawing models rather than emphasizing a fine arts model of instruction. They contended that art teachers should give more attention to allowing students to generate their own meaningful graphic images.

Nelson and Janzen (1990) used case study methodology to study educational opportunities and alternatives offered to a particular artistically gifted and talented student in a rural setting. Factors the authors believed helped this student succeed were strong family support, a psychologist and a coordinator who encouraged appropriate educational options, support she received in college, and her own strong personality.

Zimmerman (1992b) reported factors that influenced the spontaneous graphic development of her artistically talented son, Eric, from pre-school through the tenth grade. Clark and Zimmerman (1987b) also described programming opportunities offered to Eric, in another case study conducted through interviews and observations. In the most recent case study of Eric and his work, Zimmerman (in press) demonstrated the impact of in-school and out-of-school educational opportunities on Eric's art development and concluded that his progress was a result of intensive and prolonged instruction. Zimmerman advocated that art development should be regarded as a learned set of abilities and knowledge that, to a large extent, are influenced by available educational opportunities and the cultures in which a student lives, studies, and works.

Local and Regional Program Evaluations

Examples of program evaluation research reports, with regard to program options for talented arts students, have been reported. Many descriptions in journals about programming for students gifted and talented in the arts, however, are intended solely to generate publicity about the success of a program and rarely provide analytic, critical, or evaluative information.

Project CREST, in Connecticut, was an enrichment program for talented elementary school art students that included museum trips, in-school and out-of-school performances, arts and crafts demonstrations, and artists-in-residence. The research involved in this program included assessing students' creativity and interviewing them about their involvement in the program. An independent evaluator reported that students felt they were more open to new experiences in the arts than before they entered the program (Krause, 1987).

Two research studies involved interviews with junior and senior high school students at summer arts workshops. The Indiana University Summer Arts Institute was a residential, summer program for students entering grades 7 through 11 who were talented in the visual arts. The research used interviewing and focus group discussions to study students' views of themselves, their schools, their art studies, and their teachers, students, and curricula at the Institute. Most students in this study reported that their schools offered their only social community. They were pleased to be grouped with others with similar abilities and interests in the arts and claimed to be more conscious of their own abilities than before they participated in the Institute (Clark & Zimmerman, 1988). A Summer High School Art Workshop at the University of Iowa involved 20 high school students identified as talented in the visual arts. In 1989, when Zurmuehlen (1991) interviewed these students, she found that they could recall perceptions of early art experiences, choices of art media, subject matter interests, and environmental influences. All remembered satisfying early art experiences and support from family members, friends, and teachers. At the University of Iowa workshop, they enjoyed being able to create art work over extended periods of time and taking responsibility for the content of their art work. Zurmuehlen (1991) concluded that secondary art curricula for gifted and talented art students should be focused on allowing students to choose media and subject matter so that they can develop meaningful themes in their art work that provide a context for their continuing interest and commitment to art.

Two research studies reported in 1978 were focused on the Pennsylvania Governor's School for the Arts (PGSA). Westfried (1978) administered tests to students attending the PGSA that measured outcomes, such as their self-concepts and leadership activities and how these were affected by attending the program. Results revealed that the brief PGSA experience had overall positive effects on self-esteem and leadership behaviors of those students selected for the program. Clay (1978) studied the PGSA's program and organization intensively and compared them with published USOE guidelines for education of gifted and talented students and with other secondary schools for students gifted and talented in the arts. Unlike most program descriptions, this report contained critical examinations, critiques, and recommendations for changes. For example, Clay noted that the PGSA would be strengthened by better teacher preparation about meeting the needs of talented students. In the Symposium for the Arts program in New Jersey, reported by Dorhout (1984), 115 students, aged 6 to 12, interacted with professional artists and teachers for two days. Using a locally constructed instrument, a significant correlation was found between concrete experiences with professional artists and attitudes towards the arts.

The purpose of Lally's (1986) study was to describe administration of gifted education programs in rural Alaskan school districts. It was reported that successful programs appear to be those that combine both traditional, academically oriented curricula with more nontraditional offerings related to leadership, the arts, and native cultural and linguistic areas.

An East Tennessee State Fine Arts Program was studied to determine whether talented, primary grade students who participated would score significantly higher on pre- and posttests of intelligence, language arts achievement, creativity, and personality than similar students who did not participate in the program. This study revealed participants scored significantly higher on tests of intelligence and creativity than other students (Dillard, 1982).

James (1988) studied former students selected as talented in the arts and enrolled in the Educational Center for the Arts (ECA) in Connecticut. One group attended in 1974 and another in 1985. Their experiences and perceptions were investigated through documentary materials, interviews, and questionnaires. James found a positive relationship between attending the ECA program and art development in respect to students' later educational and career attitudes and decisions.

The University of Texas Arts Enrichment Program is a program option offered to 4th-, 5th-, and 6th-grade gifted and talented arts students. The goals of this program are to develop visual and aesthetic sensitivities, and increase abilities to talk about and make judgments about art. Research was developed from questionnaires and interviews. A final exhibition of the participants' work, including sketchbooks, also was assessed; 89% of the participants increased their scores and evidenced gain scores in language skills and tasks with manual and aesthetic components.

The purpose of the Johnson State College Early Summer Arts Programs in Vermont was to involve adolescents in college level courses for credit along with traditionally qualified college students. Teachers were members of the arts faculty, as well as professional actors, musicians, and dancers. A survey questionnaire, a self-directed learning readiness scale, and telephone interviews were used in this longitudinal study, conducted by Confessore (1991). It was found that 78% of past students were still engaged in art-related activities and 52% currently were pursuing art-related degree programs.

Authentic Assessment

If a goal of educating artistically gifted and talented students is to have students apply knowledge in different situations and employ what they have learned to create new understandings, then authentic assessment of art learning is most appropriate. Zimmerman (1992a) used a variety of authentic measures to evaluate student and program progress and achievement at the Indiana University Summer Arts Institute. She found that these assessments provided valuable information about how well goals set for the students and program were being met and how improvements could be made.

Summary and Conclusions

Highly able gifted and talented visual arts students need access to spaces and facilities that resemble those used by artists. Students interested in studying art history, art criticism, or aesthetics at advanced levels also need access to professional level books, slides, periodicals, and art reproductions, as well as appropriate work spaces that support advanced or accelerated study and problem-solving project work about nonstudio aspects of the visual arts (Clark & Zimmerman, 1987a).

There is no foundation of research on which to conduct meta-analysis research about programming opportunities for students gifted and talented in the visual or performing arts, although there is an obvious need for such a foundation. The paucity of research currently available is a deterrent to further progress in efforts to provide meaningful programming opportunities for students gifted and talented in the visual arts.

Administrators of school-based programs for highly gifted art students should create a climate in which flexibility and alternatives in program planning are encouraged. Such students should be offered options that might include: (a) remaining in their school for part of the day and attending a nearby college or university for advanced art courses, (b) taking part in Advanced Placement art courses offered in a high school that earn college credits, (c) enrolling in correspondence courses with college level art content, (d) attending fast-paced art courses in which curriculum compacting allows two years of course work to be covered in one year, (e) taking advantage of opportunities to bypass course prerequisites by examination, (f) earning full credit for courses by examination, (g) going to high school only two or three years and entering college early, and (h) attending classes at the college level and studying with mentor-artists (Clark & Zimmerman, 1987a).

RECOMMENDATIONS ABOUT PROGRAMMING OPPORTUNITIES FOR TALENTED STUDENTS IN THE VISUAL ARTS

The following recommendations have been derived from review of issues and practices, and related research, about providing programming opportunities for students identified as gifted and talented in the visual arts. Each recommendation is followed by a brief discussion and suggestions for future research.

Recommendation One: There should be development of some agreed upon vocabulary of terms relative to programming opportunities for the education of students with high abilities in the visual arts.

Discussion: There is an abundance of disparate terminology being used to describe a relatively limited number of practices used to provide alternative program options for artistically gifted and talented students. As a result, there is confusion about terms and conflation of concepts related to these terms. In addition, language and concepts used in general gifted and talented education are not always directly relevant to issues and practices in education of highly able art students. Editors of major journals could lead in demanding consistent and economical usage of terms by writers reporting about programs or research for students gifted and talented in all aspects of education.

Recommendation Two: Research should be conducted to evaluate the effectiveness of programming options such as mixed-ability grouping, ability grouping, and acceleration as applied to students gifted and talented in the visual arts.

Discussion: There is a paucity of research to support decision making about programming opportunities and alternatives appropriate to the needs of students gifted and talented in the visual arts. In general gifted and talented literature there is a body of research and findings about the effects, advantages, and disadvantages of mixed-ability grouping, ability grouping, and acceleration opportunities for gifted and talented students. In the field of education for artistically talented students, no such body of research exists. Research that does exist often is focused upon characteristics such as self-esteem, leadership, inactivity, or intelligence and does not attend to content students are learning in areas of art making, art history, art criticism, and aesthetics. Therefore, no specific recommendations can be defended or justified, based upon research findings, for use with artistically gifted and talented students at this time. This is especially true about mixed-ability grouping in art education, although there have been some limited research studies about the effects of ability grouping and acceleration for artistically gifted and talented students. Further research and greater quantities of research are critically important at this time.

Recommendation Three: Universities and colleges and private, federal, and state agencies should be encouraged to support ongoing, large-scale survey research to address demographic issues about the nature of programming opportunities for high ability arts students, including size, purpose, design, selection, curriculum, funding, time allotments, and arts-related experiences being offered.

Discussion: There were a few survey research studies conducted in the 1980s that provided limited data about programming opportunities available to artistically gifted and talented students across the United States. These surveys, however, were not directed exclusively to reporting and clarifying alternative programs for students with high abilities in the visual arts. Instead, they addressed issues such as identification of students gifted and talented in the arts or description of general art education programs. There currently is little information available about many important factors needed to understand the nature and effectiveness of programming options being offered to students gifted and talented in the visual arts.

We suggest that colleges and universities offering gifted and talented education programs in the visual arts need to organize and support a major research effort to gather data and create a national data base about size, purpose, design, selection, curriculum, funding, time allotments, and arts-related experiences being offered to students with high abilities in the visual arts. Such a data base should be updated on a continual basis to supply current information and data for persons engaged in research about programming opportunities and alternatives for artistically gifted and talented students.

Recommendation Four: Evaluation studies need to be conducted, and results compared and contrasted, with respect to specific program options within mixed-ability grouping, ability grouping, and acceleration programs to help identify the most efficient and effective options appropriate to various contexts and diverse populations of students who are artistically gifted and talented.

Discussion: At the present time it is not possible to defend program options, such as a pull-out program or a mentoring program, based on research outcomes relevant to special needs of students who are gifted and talented in particular aspects of the visual arts. Such programming decisions currently are not being made on the basis of research findings, the specific needs of students, or the effectiveness of their teachers; rather, they are being made on the bases of expediency and administrative convenience. Research is needed to establish the educational efficiency and effectiveness of various programming opportunities and alternatives with respect to the educational needs of artistically gifted and talented students from different economic, ethnic, cultural, and gender backgrounds and who have studied in a variety of rural, urban, or suburban contexts. Outcomes of such studies need to be contrasted and compared so that relevant and appropriate decisions can be made based on cross-comparisons of similar programs across the United States and in other locales and countries.

Recommendation Five: More individual case studies, and the initiation of longitudinal research about large populations, are needed to create a basis for understanding which educational interventions are best suited for students with high abilities in the visual arts.

Discussion: Initiation of longitudinal research and more individual case studies about the effects of programming opportunities for artistically gifted and talented visual arts students are recommended to counter the paucity of information currently available. Not only should these studies be carried out separately, but comparisons of such studies with similar studies should be conducted to substantiate or refute research outcomes and armchair speculations. It will be only through group and case studies, in which a wide range of programming options are evaluated, that generalizations can be created about the best educational interventions for students with high abilities in the visual arts.

Recommendation Six: Authors of reports that include evaluation of programming opportunities for students with high abilities in the visual arts should adopt a standard practice of reporting a program's weaknesses, as well as its strengths, and such evaluations to be conducted, using authentic as well as standard measures, by persons not directly associated to the program being assessed.

Discussion: The vast majority of reports of contemporary educational interventions for students identified as artistically gifted and talented have been carried out and reported by persons closely associated with the programs. Very few of these reports have been critical of the programs being described and reported. Too often, those who have such a vested interest are concerned primarily with reporting a program's successes; obviously, they also should not be responsible for a program evaluation or assessment. The predictable result often is positive evaluations, even laudatory, without any criticism with respect to program improvements for future applications. Evaluation studies that are objective and use a variety of measures, including authentic ones, are needed to establish analytic, critical, and evaluative or interpretive information about programming opportunities. Case studies should also be conducted, in which a wide range of programming options are evaluated. The evaluation results should focus on the best educational interventions for students with high abilities in the visual arts.

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Programming Opportunities for Students Gifted and Talented in the Visual Arts

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Introduction

The major purpose of a visual arts program for artistically gifted and talented students is to bring students together with high interests and abilities in art in ways that will broaden and deepen their knowledge about art, sharpen their art skills, and offer them learning opportunities rarely found in a regular art classroom setting. Students become aware, through participation in such programs, that there are other gifted and talented art students who share their needs and interests. Many are able to meet art faculty, professional artists, and others who may act as role models and give them insights into various art careers. Programs for artistically gifted and talented art students give recognition to students who, due to their outstanding visual art abilities, require educational support, experiences, and facilities that go beyond what generally are available in art classrooms.

In 1975 children capable of high performance in the visual and performing arts were identified, in the Marland Report, as a subgroup of gifted and talented students. In Public Law 95 - 561, Congress revised Marland's definition and stated that gifted and talented students were those who gave evidence of high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and require services or activities not usually provided in schools. More recently, The Jacob K. Javits Gifted and Talented Students Education Act of 1988 (Public Law 100 - 297 4003) established a similar definition of the term *gifted and talented students* and also included those who give evidence of high performance capability in art fields and who require services and activities not usually provided by schools. We will be using the terms *artistically gifted and talented* and *students with high ability in the visual arts* to refer to students gifted and talented in the visual arts. A frequent distinction has been made between *giftedness*, associated with intellectual abilities, and *talent*, associated with other types of skills or aptitudes. Gagné (1985) has advocated substituting the term *gifted or talented* for the usual term *gifted and talented*. Rather than implying different meanings for the terms *gifted* and *talented*, we believe they should be interdependent and linked together in the term *gifted and talented*. Such linkage serves to place education for artistically gifted and talented students in the arts on an equal basis with gifted and talented students in areas such as mathematics and science, and not relegated to technical or creative endeavors that often are considered free from intellectual abilities (Clark & Zimmerman, 1992).

It has been over twenty years since the Marland Report was issued with its multifaceted definition of gifted and talented students, a definition that included high performance capabilities in the *visual and performing arts* as a recognized aspect of giftedness (Marland, 1972). During that time, however, there have been few studies, and certainly no large scale or longitudinal studies, directed toward supporting efficient and effective programming opportunities and better understanding of educational needs of students gifted and talented in the visual and performing arts. People working in general gifted and talented education have not directed their attention away from their original focus upon students with highly developed intellectual and academic abilities in traditional school subjects:

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> Traditionally, our public schools have been concerned with academic subjects and... the search for gifted children has usually discovered the brilliant student in such areas. Mental testing has also often paralleled the school emphasis—excluding the arts—and again has identified as "gifted" those who are able to achieve in science, literature, mathematics, or history. (Lally & LaBrant, 1951, p. 243)

> The field of gifted and talented education historically has focused a great deal of its time and resources on the study and development of academic talent only...it is time to expand that focus to more fully encourage educators to become aware of the multiple talents students have, and to work toward developing those talents to the fullest. (Parke, 1985, p. 177)

This lack of attention to the needs of students gifted and talented in the arts is apparent in examination of several recent National Association for Gifted Children (NAGC) convention programs; these are devoted almost exclusively to aspects of intellectual or academic giftedness. It also is apparent in examination of articles in major journals about the education of gifted and talented students; these are devoted almost entirely to aspects of the social development of gifted and talented children and the education of students who demonstrate high level intellectual or academic abilities and achievements.

At the same time, art education researchers also have not directed their attention specifically toward better understanding of students with highly developed abilities in the visual arts, because many feel that these students already are well served by their art teachers or that art education programs should be designed to serve *all* students, regardless of differential ability levels. As a result, there is little research available to help direct school-based decision making about how best to provide programming opportunities for students gifted and talented in the visual arts (Clark & Zimmerman, 1984a, 1987a).

Some of the best developed sources of information at this time, that could be applied toward providing efficient and effective programming opportunities for students gifted and talented in the visual and performing arts, are those studies already in the literature that were directed toward describing, analyzing, and prescribing educational services for intellectually and academically gifted students. The bases for many of these programs are founded in considerable research and thoughtful analyses of past programs. Yet, even here, many questions remain unanswered. Some professionals working in gifted and talented education resist comparing and contrasting the seemingly disparate groups of students who may be identified as intellectually or academically gifted and talented and students who may be identified as gifted and talented in the arts. Several writers, sympathetic with expanding the horizons of research, have questioned the singular focus of professionals in gifted and talented education on traditional "basic" subjects and intellectual or academic aspects of giftedness. Gardner, for example, has been quoted as saying, "I was surprised when I got into academic psychology that the arts were almost entirely excluded, as if it would be embarrassing to study them in a cognitive way" (Buescher, 1985, p. 182). Wenner (1985) also has addressed this imbalance:

> Any student or individual making a serious commitment to pursue training and ultimately a career in the arts often faces obstacles that are not typical of other academically gifted students. Administrators, teachers, and parents often find it difficult to accept talent in the arts as being equal in importance to talent in the academic fields. (p. 221)

Clark and Zimmerman (1987a, 1988, 1992) reported that art educators also have questioned the applicability of research from any other field that is not directed specifically toward the needs of students who are gifted and talented in the visual arts.

Karnes and Koch (1985) reported that, at the state level, 28 states included fine and performing arts as a category in their definition of gifted and talented students. There was, however, little evidence of such services for artistically gifted and talented visual and performing arts students at the state level at that time, although some local programs were being offered in selected school districts (Bachtel-Nash, 1984; Clark & Zimmerman, 1984a). From a number of sources, dating from about 1983 to the present, there is a growing body of evidence of more specific services or programs for students gifted and talented in the arts (Bachtel, 1988; Clark & Zimmerman, 1984a; Leonhard, 1991). For many decades, school and program administrators in the United States have supported various kinds of special education for many categories of students with special needs, including those whose performance in school achievement is well below the average. Arguments for equal attention to the needs of students whose abilities are well above average, who are equally distant from the mean or average in most classrooms, have not been accepted as readily. Similar levels of support and services are *not* available for high-potential or high ability students, including students who are artistically talented, even though they also are similarly 'different' and have equally special educational needs. There are many services, some very expensive, available in most school districts to serve the needs of art students who have special needs due to handicaps or disabilities (Anderson, Colchado & McAnally, 1979; Atack, 1982; Clements & Clements, 1984).

The needs of another special population of students, those gifted and talented in the arts, often are not met in local schools. One reason is that it is commonly believed, even by school personnel, that gifted and talented students can "make it on their own" and don't need special school services. This conclusion has been disproved many times and the landmark Marland Report (1972) specifically directed that gifted and talented students, including those in the visual and performing arts, require services and activities *not ordinarily provided by the schools* (Marland Report, 1972). This requirement echoes arguments used to establish "special education" programs in schools and for very similar reasons. One argument is that the typical classroom is designed, and functions effectively in most cases, to serve the needs of the majority of students. In most classrooms, however, needs of atypical students, both below and above the mean, are not served adequately. These students need differentiated curricula and programming opportunities designed specifically to serve their unique characteristics and abilities.

Attention to the needs of gifted and talented students has been of vital concern to some educators for many years. In the past, gifted students often were viewed as outcasts in regular classrooms. In terms used popularly in 1928, Goddard claimed that "it is even more desirable to segregate the gifted than the defectives...because they can do more and better work than the regular children" (p. 35). Similarly, Bentley (1937) explained that "the gifted...are misfits in the regular classroom...[they] require special attention and provisions that will assure them the right of proper training for individual and social advance" (p. 171). Other, more contemporary, educators have recognized high ability students' adaptability to a variety of settings and have advocated special programs designed to serve their special needs. VanTassel-Baska, for example, has written that:

> Equality of opportunity and equality of treatment in education...are not the same, nor should they be.... High quality services should be available to all, but the nature and organization of those services should vary based on diagnosed need, just as in the medical profession. (1992, p. 70)

In the past, however, few voices have been raised either to recognize or help meet the special needs of students whose gifted and talented abilities are expressed actively in the visual or performing arts (Clark, 1989; Clark & Zimmerman, 1984a, 1992).

Background: 1850 - 1950

Accommodations to individual differences of superior students in a variety of subjects have taken many forms in American schools. Early experiments with accommodations for gifted and talented students began in the late 1800s with ability grouping and grade skipping. By 1900, grade skipping and double or half-year promotions were popular practices. Other accommodations included vacation schools, credit by examination, individualized instruction, mentor programs, and special classes (Heck, 1940). The vast majority of such programs, however, have emphasized academic studies and the superiority of intellectually gifted and talented students.

During the 1920s, two major developments in American education influenced special programs for students with high abilities, the Progressive Education movement and the research of Lewis Terman. Supporters of the Progressive Education movement advocated heterogeneous grouping and self-contained classes at all grade levels. As a result, ability grouping and grade skipping almost disappeared during the 1920s and 1930s except in major large-city school systems (Chaffee, 1963). Publication of the first volume of Terman's lengthy *Genetic Studies of Genius* in 1925, renewed concern for accommodations for high ability students and programming to help meet their special needs.

In 1935, an Arts High School was founded in Newark, New Jersey, and a Central Arts High School was established in New York City to serve the needs of students with highly developed abilities in the visual and performing arts. Subsequently, in 1938, other specific cluster schools also were established in New York City, such as the Bronx High School of Science and the High School of Music and Art. Students from throughout the city were admitted to these schools based on their academic abilities or art-related performance abilities. Other cities across the country began to establish specific cluster high schools to serve high ability students with specific subject interests. These arts magnet schools always demanded superior performance in all subjects as a condition of continued enrollment.

Background: 1950 - 1985

During the 1950s, there was a renewal of interest in various forms of accommodation to the educational needs of students with high abilities. Services for special education students, however, were far more common. Although half of the schools in the United States offered special education programs and services in 1954, only 4% offered special accommodations for gifted and talented students (Freehill, 1961). By 1976, Wood reported a survey research about fine arts high schools in the United States, including its territories, but located only 22 such schools at that time. During the 1960s, a large number of existing programs were initiated in elementary and secondary schools for academically gifted and talented students. More recent developments have led to expressions of concern for students underrepresented in gifted and talented education programs, such as early childhood, handicapped, culturally and ethnically different, or rural populations and, among these groups, problems of identification and accommodation for high ability students in all aspects of giftedness.

Most programs designed specifically to serve the needs of students gifted and talented in the arts, however, were created recently, during the 1970s and 1980s. During the 1980s, as expressed in a number of publications, there was renewed interest in programming opportunities and alternatives for students talented in the visual arts. Hurwitz (1983) wrote *The Gifted and Talented in Art: A Guide to Program Planning*, in which 13 alternative, model programs were described for gifted and talented students in the visual arts and guidelines were offered for establishing such programs. In the same year, Madeja (1983) edited *Gifted and Talented in Art Education*, in which directors of 14 exemplary programs wrote descriptions and reviewed programs that offered a wide variety of programming opportunities and alternatives for artistically talented students. From September, 1982, to March, 1984, Clark and Zimmerman edited monthly "Gifted and Talented Times" columns for *School Arts* magazine. The purpose of these columns was to exchange information about school and community programs, books and other publications, educational materials, and legislation that contributed to the education of gifted and talented students in the visual arts. In 1983(c), Clark and Zimmerman co-edited a special issue of *School Arts* devoted to programs for artistically talented students. Clark and Zimmerman (1984a) also wrote *Educating Artistically Talented Students* that focused upon contemporary practices of identification, teacher characteristics and strategies, curriculum content, and administrative settings and arrangements for students with highly developed abilities in the visual arts. Also in 1984, Bachtel-Nash published a *National Directory: Programs for K-12 Artistically Gifted and Talented Students* in which she described characteristics of current programs offered for students gifted and talented in the arts. In 1985, *Developing Talent in Young People*, edited by Bloom, was published and became a major reference work for those who study the development and nurturance of students with unusual abilities in a number of fields of endeavor, including the arts. The groups whose developmental histories are reported in this book included world-class honors winners, all from the United States and all under 40 years of age. Pianists and sculptors were studied to represent the fields of music and visual arts. Bloom and other contributing authors analyzed the developmental histories of these gifted and talented young people through interviews with the subjects; their siblings and parents; and their teachers, coaches, and mentors. The image that emerged from this study is of particular interest in regard to the commitment to specialized education and development of all subjects in the study:

> Our present findings point to the conclusion that exceptional levels of talent development require certain types of environmental support, special experiences, excellent teaching, and appropriate motivational encouragement at each stage of development. No matter what the quality of initial gifts, each of the individuals we have studied went through many years of special development under the care of attentive parents and the tutelage and supervision of a remarkable series of teachers and coaches. (Bloom, 1985)

Background: 1985 to the Present

In 1987(a), Clark and Zimmerman wrote *Resources for Educating Artistically Talented Students*, based on their analyses of extant policies and programs and available instructional resources for gifted and talented students in the visual arts. Bachtel, in 1988, updated her earlier program descriptions with analyses and interpretations of her data in *A Study of Current Selection and Identification Processes and Schooling for K-12 Artistically Gifted and Talented Students*. This report contained descriptions of many program accommodations being used across the country to help meet the needs of students talented in the visual and performing arts. In 1991(a), Zimmerman edited a special issue of *Roeper Review* devoted to an international symposium about developing a comprehensive program for teaching visual arts to highly able teenage students. In 1991 and 1993, Clark and Zimmerman edited two monographs that included descriptions of programs and curriculum units designed by teachers in the in-service Artistically Talented Program at Indiana University.

Since Clark and Zimmerman's (1984a) and Bachtel's (1988) studies were published, there have not been any large-scale, national surveys or other forms of study devoted specifically to investigating programming options or alternatives for students gifted and talented in the visual arts. Leonhard (1991) presented some relatively recent survey data related to programming for students gifted and talented in the visual and performing arts in his report about the status of arts education in American public schools. His findings are of great interest to persons interested in the education of students gifted and talented in the visual arts, but too little contemporary research exists to support drawing conclusions with wide applicability to programs for such students.

Programming Opportunities

Although there are many suggestions for programming and descriptions of educational opportunities for artistically gifted and talented students, there is a very limited research base upon which to make recommendations about the most effective practices and programs. This is especially true when programming takes into account students from a variety of backgrounds who study in diverse educational contexts. For example, Seeley (1991) noted that there are some excellent models around the country of programs for gifted and talented students in the visual and performing arts. He made the following generic suggestions for creating arts program opportunities for students who are gifted and talented in the arts: (1) elementary students can attend secondary art classes where content and facilities are more challenging, (2) groups of students can be clustered together for advanced instruction for master classes, (3) the most outstanding students can enroll in magnet schools, (4) school-based programs can be augmented with individualized instruction with private instructors, (5) artists-in-residence programs through state art councils can be programmed to include gifted and talented arts students, (6) local artists can be used as valuable resources to supplement school based programs, (7) alternate programs not typically found in schools can be created, (8) real outlets for students, including galleries and writing for publications, can be sought, and (9) collaborations among the visual and performing arts should be developed in schools. These suggestions appear to be sensitive and intelligent responses to programming needs of artistically gifted and talented in the visual and performing arts. However, such options should be researched to determine which are best suited for different levels of education, in a variety of contexts, from differing populations with diverse economic, social, racial, and cultural perspectives. A programming option effective for suburban, white middle class students, for example, but may not be as effective for artistically gifted and talented Mexican-American students living in rural areas.

Little also is known about long-term outcomes of various program opportunities or their effects on artistically gifted and talented students over time. Few research studies, and no large-scale studies of arts populations or programs, have been reported, as has been done in regard to intellectually gifted students and educational programs designed to serve their needs. Before such large-scale research might begin, however, there are many definitional and semantic problems in relation to terms used to describe programming opportunities for students gifted and talented in the visual arts that need to be clarified. Different program administrators and writers often describe similar types of programming options with very different terms. There also is confusion about the focus of attention that should be addressed; Robinson (1990), for instance, has claimed that "advocates for talented children need to clarify for the general education audience that educational programs for the gifted are not simple administrative arrangements" (p. 36).

Many writers have proposed different categories and definitions of programming opportunities currently offered by schools throughout the country. Based upon review of the literature of gifted and talented education and of art education, the following outline of programming opportunities and alternatives for gifted and talented students in general studies and in the visual arts is offered:

- I. Mixed-ability grouping
    - A. In-class enrichment
    - B. Cooperative learning
    - C. Individualized instruction (e.g., self-study units and mentoring)
- II. Ability grouping
    - A. Specialized schools (e.g., magnet schools)
    - B. Special classes in regular school for all of the school day (e.g., classes recruited from one school or classes recruited from several schools)
    - C. Special grouping for part of the school day (e.g., pull-out programs, special courses, released time, clubs, artists-in-residence)
    - D. Grouping for school-related activities (e.g., field trips, school/museum visits)
- III. Acceleration
    - A. Grade skipping
    - B. Early admissions
    - C. Rapid progress (e.g., accelerated progress, Advanced Placement, credit by examination)

In the following discussion, programming opportunities and options will be defined and discussed for each category of this outline. Alternative points of view will be set forth as they relate to education of students who are gifted and talented in academics and in the arts. Following this discussion, current research studies about programming opportunities for students with high abilities in the visual arts will be described and recommendations for future research will be described as a result of conclusions drawn from these studies.

Mixed-Ability Grouping

Typical classrooms across the country are filled with students who are together by no other criteria than having been born into a similar, relatively restricted age group. As a result, highly diverse ability levels among groups of students, in all school subjects, are obvious to teachers and students. Most elementary school classrooms contain students whose ability levels, across the subjects being taught, including art, will vary widely, *without* including students with exceptional ability levels at either ends of the spectrum. The most common adaptation to this diversity among students' abilities has been for teachers to create two or three differentiated ability groups in reading, language arts, science, and other subjects.

In-class Enrichment

Enrichment has been used to provide highly able students with a variety of learning situations, materials, and activities that provide depth and breadth learning experiences beyond those offered in a school's regular program. Maker (1986) defined *enrichment* as teaching different content or using different teaching methods beyond those used in the regular classroom to meet the needs of students with different interests and learning styles. Enrichment is used commonly in gifted and talented programs and has been both advocated and criticized. Stanley (1977) described four kinds of educational enrichment: busy work, irrelevant academic work, cultural work, and relevant academic work. According to Stanley, *busy work* consists of having gifted students do more work in a subject matter in which they already excel. *Irrelevant academic work* consists of assigned, high level work that is not based on specific needs of students. *Cultural enrichment* consists of providing certain types of cultural experiences that go beyond the usual school curriculum. *Relevant academic work* consists of assigned tasks that are designed to help students improve their work in specific curriculum areas. Stanley believed that cultural enrichment is justifiable, but the other forms of enrichment, without acceleration, are not justifiable in a program for gifted and talented students with high abilities.

Enrichment is far more popular in gifted and talented education programs than acceleration. According to Ellis and Ellis-Schwab (1986), enrichment programs are easier to carry out in schools, more likely to be supported by parents and administrators, and offer flexibility within programs in mixed-ability classes. They also wrote that enrichment provides more time for self-motivation, creative interests, and independence that they felt were not nurtured under programs of direct acceleration. Rogers (1991) claimed that full-time enrichment grouping produces substantial academic gains in general achievement, critical thinking, and creativity for gifted students enrolled in full-time special programs.

An advantage of enrichment is that it provides a means for differentiated education for high ability students in schools and school districts that are not large enough to offer specialized classes. It demands few changes in a classroom or the general school setting. Students can remain with other students their own age and at their own grade levels where they can help motivate these students. Enrichment is viewed by some educators as more democratic than ability grouping because it does not call for the division of students into competitive groups.

In the past, there have been many reservations expressed about enrichment programs (Clark, 1979; Fox, 1979; Grossi, 1980; Kough, 1960; Renzulli, 1977). It was claimed that few teachers are prepared to differentiate their grade-level curricula for enrichment programs that demand knowledge of the scope and sequence of various subject matters beyond the grades they teach. Today, however, many school districts have curriculum specialists and gifted and talented coordinators, and in some cases enrichment resource teachers, who know where to obtain enrichment materials and resources. A major criticism of enrichment programs is that what typically has been called "enrichment" is claimed by some educators to be simply good education for most students (Renzulli, 1977) and often the needs or interests of gifted and talented students are not addressed (Grossi, 1980). Another major criticism of enrichment efforts is that they can be piece-meal or inconsistent across grades. It is important that a gifted and talented program staff identify and set a philosophy and policies that will be followed with consistency throughout an entire program before making a commitment to these approaches or to other program options. (Clark & Zimmerman, 1984a, 1987a)

In art education, enrichment has come to mean providing small-group or individualized instruction to high ability students who remain in mixed-ability or heterogeneous classes with their age peers:

> Enrichment occurs when gifted and talented students are challenged to do problem solving, individualized work, and creative and critical thinking that is beyond the interests and abilities of other students in a class. (Clark & Zimmerman, 1984a, p. 148)

Arts classes, in general, often are characterized as offering "enrichment" for all students. McWilliams (1964), for instance, has claimed that the fine arts, well taught, are enrichment classes, *per se*, and Barnes (1963) has called for all instrumental art activities used to teach music, science, or social studies to be viewed as "art enrichment activities." These claims deny the value of art-related learning activities for *all* students at various ability levels and do not attend to the abilities and needs of gifted and talented students who should be challenged at higher and more differentiated levels than average ability students.

Cooperative Learning

There is an ongoing debate in the field of gifted and talented education about the effects of a mixed-ability grouping strategy, cooperative learning, on the education of high ability students. Slavin (1980) has been the principal advocate for *cooperative learning* and this program alternative has become very popular with educators committed to current concerns for reform or restructuring of schools and classrooms. According to Slavin, "cooperative learning refers to classroom techniques in which students work on learning activities in small groups and receive rewards or recognition based on their group's performance" (1980, p. 315). One aspect of cooperative learning is that it emphasizes mixed-ability grouping both in project-work-oriented groups and in general classroom studies.

Cooperative learning, Slavin contended, helps high achievers accept and get along with others and special enrichment programs for high ability students would be eliminated because they result in "*defacto* ability grouping" (Slavin, 1990b, p. 5). According to Webb (1985), cooperative learning as a program option for high ability students, in mixed-ability teams, can be effective for high as well as average or low achievers. More recently however, Slavin (1990a) claimed that mixing students with differential ability levels has been overemphasized and that schools and districts should first decide on curriculum goals and then choose instructional models to meet those goals.

Despite the popularity of cooperative learning programs, many educators who work in support of gifted and talented education are disturbed by Slavin's claims of its success in regard to high ability students (Robinson, 1990, 1991). Robinson and others have pointed out that *any* treatment will show improvement over traditional models of instruction. Based on her analyses of cooperative learning research, Robinson (1991) has recommended that cooperative learning should *not* be substituted for specialized services for gifted and talented students at any time. Similarly, Rogers (1991) has reviewed cooperative learning research and programs and has disputed many of Slavin's claims. Rogers did acknowledge that there is some positive evidence for mixed-ability cooperative learning, particularly in respect to acceptance of culturally diverse and academically handicapped students by others in a cooperative group.

There is not sufficient research evidence, or reporting of analyses of cooperative learning programs in schools, to justify either positive or negative claims about its effects with gifted and talented academic or arts students. Unfortunately, however, proponents of cooperative learning sometimes have effectively questioned and blocked school-based programs based on differential ability grouping, particularly for high ability academic students. Although there has been much attention paid to cooperative learning of major school subjects, there has been no reported research about cooperative learning in arts subjects or in arts classes. No applicability can be claimed or refuted at this time in respect to cooperative learning in the arts.

In-class Enrichment and Cooperative Learning in Fort Wayne, Indiana

A unit about Japanese art was taught by an art teacher to a fourth grade class in Weisser Park/Whitney Young Elementary School in Fort Wayne, Indiana (Kruse, 1991). This school has a year-long emphasis on multicultural education integrated into the regular school curriculum. To highlight each culture studied, students in every grade from kindergarten to fifth, create a play or presentation offered for the rest of the school.

Ceremonies, festivals, or important occasions have been the focus of these performances. The culture that is to be studied for each year is selected and researched by a committee of teachers that also acts as a resource group. The fourth grade class that was taught this unit about Japanese art was composed of a randomly grouped heterogeneous class of 25 students in which there were 4 artistically gifted and talented students. Three months were spent working on this unit that included several short projects and one longer project.

All students were introduced through a video to Japanese art and culture as seen through the eyes of a young Japanese girl. Time was spent in an art gallery located in the school where students looked at, discussed, and drew a craft object from Japan, of their choosing, that became the focal point of designs on folders in which they kept their art work. All students, after studying Japanese kites, created textured rubbings that became parts of kites, of their own design, that they constructed. Students were encouraged to work together in groups to share ideas, plans, and materials. There often were spontaneous group discussions and critiques. Three of the artistically gifted and talented students emerged as group leaders and helped others with ideas and construction problems. These leaders appeared in a natural way and quickly were accepted by the rest of the class. In fact, students sought them out when they needed help with their projects. One of these talented students' kite became quite elaborate and she often came to class early and stayed after school to complete her own project.

Orgami became the focus of another project, in which fourth graders learned to make cranes. Working in collaboration with their social studies teacher, students taught other students in the school how to make orgami cranes. Eventually, 2,000 cranes were made and shipped to the Children's Peace Monument in Hiroshima, Japan. Children in the school in Japan that maintained the project wrote a letter and sent a picture of the cranes on the monument in Japan to the fourth grade class. One artistically gifted and talented boy became so interested in learning advanced orgami that he came to the art room at noon almost everyday to learn new techniques. Eventually he became so proficient at orgami that he began inventing his own models. This was an opportunity for a student who might not ordinarily be identified as gifted and talented in two-dimensional art making to develop his skills (Kruse, 1991).

Individualized Instruction

Schools have offered some kinds of individualized instruction for students with highly divergent ability levels throughout their history, although there are no agreed upon definitions that clarify the meaning or applicability of individualized learning as methods for accommodating the needs of gifted and talented students. One kind is "educator controlled," in which individualized education programs are managed by a teacher. Another model is "self-directed learning" in which students manage their own learning programs (Betts & Knapp, 1980; Dirkes, 1988). Arts programs typically encourage individualized project definition and individually-based, self-expression outcomes in art activities. These, however, have not been formally described or formulated as individualized instructional programs for students in elementary or secondary schools.

Many secondary school art teachers individualize their curricula in that they assign project standards and expectations, without specifying working processes or project characteristics. Art students are more likely to have worked with this type of "creative" assignment than students in more traditional or typical classes, but not all are equally comfortable with the individual responsibilities such assignments impose. In the name of individualized instruction, students with well developed abilities in the visual arts sometimes are assigned busy work or repetitive tasks that fail to develop their capabilities. Students with more highly developed art skills and knowledge typically are more comfortable with, and more likely to perform well with, open-ended learning opportunities that confront them with problems that "stretch" their knowledge, skills, and abilities.

Self-Study Units

According to Clark and Zimmerman (1987a), artistically gifted and talented students often desire to learn many things, and many of them intensively; therefore, their teachers should have resources at hand and knowledge of access to resources to meet individual students' needs, abilities, and interests. In addition to greater numbers of general resources for learning, artistically gifted and talented students need materials that will challenge and expand their abilities. They should be directed to learning materials that encourage divergent thinking, problem solving, group decision making, and awareness and consideration of multiple alternatives. In addition, they need to develop high level research skills involving problem analysis and criticism and development of advanced technical skills in relation to both studying art and making art.

Goertz and Betts (1989) described a learning center that promotes independent study and can be used to guide gifted students in regular classrooms. The learning center allows students to select their own content areas to meet their individualized needs. The students design their own centers in which results of their research are presented in a professional manner so that other students can use the learning center. This method allows gifted and talented students to select topics to study, participate in the process of creating a learning center, and use processes of higher level thinking, inquiry, and problem solving.

There are many commercial instructional resources available to schools that could be used in support of visual arts instruction through individualized or self-study units. Clark and Zimmerman (1987a) described and critiqued a variety of instructional materials that can be used to supplement visual arts curricula at various levels and lead artistically gifted and talented students to individualized development of their talents and abilities. These materials include workbooks, study guides, kits, games, and periodicals designed for students with high abilities in the visual arts. In addition, Clark and Maher (1992) also have presented annotated descriptions of units and lessons in journals, curricula, museum kits, teachers' kits, students' kits, art reproductions, games, posters, and other professionally or commercially available instructional materials that can be used to guide artistically gifted and talented students' self-study. Erickson (1992) has gathered many art history units for students in elementary and secondary levels that could be used to help individualize instruction, particularly in mixed-ability classes, for gifted and talented students in the visual arts. Unfortunately, inexpensive learning resources, such as those described by Clark and Zimmerman and Clark and Maher, are not advertised commonly in art education or general education magazines or journals. Teachers who want to have high ability students work with self-study units should be encouraged to consult publications, such as those just discussed, to help in their materials selection.

Worcester, Massachusetts Self-Study Units

Self-study units for artistically gifted and talented students were developed by upper elementary level teachers in Worcester, Massachusetts, and were funded by a small grant from an organization concerned with improving classroom instruction. Materials also were donated or found at recycling centers. Teachers committed to this project donated their time and energy to creating self-study units. At biweekly meetings, consultants spoke to teachers about methods of identification, model programs, and characteristics of artistically gifted and talented students. Forty-five schools participated in the program, in which 350 student participants were selected by classroom teachers, art teachers, and peer nominations.

This self-study program had as its primary goal to provide an art program for students with interests and abilities in art without necessitating leaving their regular classes.

Students worked on self-study units after they completed their normal work load. Five units of instruction were designed so that written materials, and art resources, tools, and media were combined in a series of packages. Teachers were involved in updating their knowledge about unit topics and art techniques. During a series of workshops, teachers prepared unit materials as a series of suggested activities that went well beyond their regular art curricula. In each unit, a different topic was explored and the form and content of the units varied according to themes and subjects. The units were loaned on a rotating basis through the art director's office. The ceramic unit, for example, was organized in three boxes. It included ceramic tools, vocabulary lists, self-study guides and questions, slides and reproductions about the history of ceramics, and clay making activities related to the boxes' contents (Hurwitz, 1983).

Mentoring

Khatena (1992) viewed a mentor as anyone in a professional community who evidences success in a particular area and who works with and guides students with an interest in that professional community. He described four different mentorship programs: (1) students released from school to work with a volunteer from business or other professions in a community, (2) students released from high school to study at a local college or university to work with an individual professional, (3) students studying in their regular classroom with a visiting artist, and (4) an art teacher. Mentoring can be done in a traditional one-on-one manner; by indirect mentoring where a contact person helps arrange field trips and meetings, plans projects, conducts interviews, and compiles information gathered from interviews with professionals, or double mentoring in which a teacher and mentor work together with a student (Winters, 1989).

Mentorship and internship programs offer high school students opportunities to study and work in real world situations, experience the challenge of practical work, explore the life style and demands of a particular career, and establish a relationship with one or more adults who have similar interests (Daniel & Cox, 1985). Mentorship programs are in many schools that offer viable options for gifted and talented visual arts students considering vocational choices in visual arts areas such as commercial design, landscape architecture, interior design, or printing. Many firms that offer computer services need staff members with art and design backgrounds. Working with commercial firms as educational partners is not a typical practice for most schools, but such relationships can extend and strengthen the visual arts backgrounds offered to gifted and talented visual arts students. Art students who are interested in studying art history or art criticism also might be paired with mentors in these or related aspects of studying the arts.

A Mentorship Program in Central Valley, New York

In 1979, a special steering committee and art faculty at Monroe-Woodbury Senior High School, Central Valley, New York, decided to offer a program of visual arts courses and learning opportunities in which the significance of the arts in society was emphasized. The art program, Exceptional Pupils Adding New Dimensions (EXPAND), offered independent study courses that allowed students to focus on their major interests and abilities. Artistically gifted and talented students in the EXPAND program receive credit for working on an independent art project and attending a bimonthly after-school seminar with other students in the program. A major goal of the EXPAND program was to equip students, who soon would become adult members of society, to appreciate the work of others, as they pursue their own goals, and they develop feelings of self-worth by putting into perspective the significance of art in society.

Independent art projects were designed by students and their facilitators; a student's age, technical knowledge, and previous experience were considered when projects were being planned. Each student and his or her facilitator developed an Individualized

Education Plan (IEP) specific to the needs and abilities of the student. In many cases, mentorships or internships were arranged with experts in a specific field. For example, one student studied with three different water colorists through college courses and mentorships and exhibited his work in a local art gallery. Another student, who was interested in medieval art history and the technique of egg tempera painting, served as an intern with the Metropolitan Museum of Art in New York, and worked with the curator of the Medieval collection. This student spent two full days a week in the museum compacting a full high school academic load into three days a week. EXPAND students also attended after-school seminars so that they could spend time and share their experiences with other students in the program (Clark & Zimmerman, 1983b).

Ability Grouping

Ability grouping has been defined many ways by many educators. Nevertheless, these definitions generally overlap and refer to some means of bringing students together with special and similar needs, interests, or abilities for educational purposes (Clark & Zimmerman, 1984a). Kulik (1992) defined ability grouping as "the separation of same-grade school children into groups or classes that differ markedly in school aptitude" (p. ix). Ability grouping can take many forms, including special schools for gifted and talented children, special classes within a regular school, special class periods where the gifted and talented leave their regular classroom for part of their work, or ability groups within the regular classroom (Kough & DeHaan, 1955). A more contemporary source lists forms of ability grouping to include tracks, regrouping for specific instruction, cross-grade grouping, within-class grouping, accelerated classes for gifted and talented students, and special enriched classes for gifted and talented students (Kulik, 1992). These two lists, prepared 25 years apart, obviously overlap in their categorizations of ability grouping.

Ability grouping often is described by different terms, such as multilevel grouping, multitrack programs, pull-out programs, honors programs, homogeneous grouping, or cluster classes. In gifted and talented education, ability grouping has taken many forms in schools, from full-time specialized schools such as arts magnet schools, to part-time "pull-out" programs as part of a school's gifted and talented education program. In some elementary and secondary schools, gifted and talented visual arts students are offered some form of art club as a regular part of the school calendar. More and more frequently, cluster groups have been formed for specialized art-related activities, such as field trips to an accessible art museum, visits to an artist's studio, or attendance at an exhibition.

In 1991, Rogers reported her meta-evaluation of 13 research syntheses on ability grouping, cooperative learning, and acceleration. She was interested in gaining an understanding of what research says about ability grouping in general and about grouping students who are gifted and talented for the purposes of enrichment and acceleration. Rogers (1991) claimed that "it is unlikely grouping itself causes gains; what goes on in the group does" (p. x). She agreed with Slavin (1986) that ability grouping without concomitant curriculum and instructional modification does not produce discernible effects, although students enrolled in full-time and pull-out programs usually do show marked academic gains (Rogers, 1991; Vaughn, Feldhusen, & Asher, 1991). In their research, Kulik and Kulik (1992, 1984) established that ability grouping does produce positive attitudes towards subject matter, but does not affect students' self-esteem or general school-related attitudes.

Kulik (1992) also conducted meta-analytic studies of grouping practices reported in dissertations, professional journals, and books. He also found that ability grouping without concomitant curriculum and instructional modifications does not produce discernible effects. He noted that the largest educational gains are in classes with an accelerated program and that enrichment programs boost student achievement by only moderate amounts.

Advantages of ability grouping include establishing an environment where gifted and talented students in ability groups are more likely to explore and exchange ideas with greater group acceptance than other groups of students, and they can pursue more advanced study in selected areas than other student groups. They also are more likely to show significant gain scores on achievement measures. Ability grouping also supports more opportunities for independent study, through specialized courses and non-school activities.

Disadvantages of ability grouping include its cost, because specialized teachers, materials, and classrooms may be required. Ability grouping for gifted and talented education requires sufficient numbers of students with similar ability levels to justify forming the appropriate groups. Some critics claim ability grouping encourages "elitist" attitudes or creates groups of students who are too concerned with achievement and competition. An often voiced concern is that ability grouping of gifted and talented students often removes students whom teachers believe are important to include in mixed-ability groups in their classrooms. Another disadvantage of ability grouping concerns "pull-out" programs, that are the most popular program opportunity offered across the United States for gifted and talented students (Renzulli, 1987). Clark (1979) pointed out that unless there is a cooperative relationship between teachers and administrators, students often are required to make up classroom work that took place during a pull-out, leading to negative reactions to ability grouping from both students and parents.

According to VanTassel-Baska (1987), debates about ability grouping for gifted and talented students often keep educators from:

> tackling the harder issues of what nature and extent of programming is most appropriate.... Until the fundamental issue of what constitutes appropriate intervention for the gifted and talented is agreed upon and activated at the local level, discussion about grouping models is clearly premature. (p. 259)

In *Resources for Educating Artistically Talented Students*, Clark and Zimmerman (1987a), listed six categories of ability grouping in the visual arts, with descriptions for each category: (1) nonresidential arts schools, full academic year; (2) residential arts schools, full academic year; (3) extra school, nonresidential arts center, full academic year; (4) within-school, nonresidential arts programs, full or partial academic year; (5) residential arts schools, summer programs; and (6) arts programs in museums and other community agencies with special time schedules. *Nonresidential arts schools* include designated art schools, such as arts magnet schools, that offer specialized programs for students gifted and talented in the visual arts who reside within the sponsoring school district. These schools, at junior or middle school and senior high school levels, usually are focused on strong academic programs as well as intensive, preprofessional instruction in the arts.

Irvington, New Jersey's Art Magnet School

In 1977, a special program for artistically gifted and talented students was established in Irvington, New Jersey, an urban community with 85% "minority" students. One school in the community was chosen as a magnet school to serve students, in elementary through high school, from all sections of Irvington. An Artistically Talented Program, as part of the Gifted/Talented Program, was designed for students with special talents in art and music. The curriculum includes varied experiences in related arts including theater, dance, creative writing, video, and photography. The arts staff, in cooperation with each community school, selects participating students on the basis of tests, art work, school records, and interviews. Self-nomination is encouraged, and parents and students make the decision to participate.

Each student attends the magnet school the entire day taking both academic as well as arts classes. Art and music classes are scheduled first, and academic classes are arranged to accommodate arts class scheduling. Students in artistically gifted and talented classes are enrolled in art classes for 90 minutes a day, as well as in special club time, for a total of more than eight hours a week. This Artistically Talented Program serves students in grades five through ten. Interrelated arts programs are emphasized in activities such as demonstrations by artists, performances by professional companies, and student visits to museums, galleries, an outdoor education center, operas, and musical theater and dramatic performances in the greater New York City area.

The art classes involve students in studio activities with emphasis on flexible planning, individual interests, and aptitudes in areas such as painting, sculpture, film, crafts, architecture, printmaking, and commercial art. Students plan individual projects with a teacher and learn to evaluate their own work. Faculty at the magnet school are art teachers within the school system, who are relieved of part of their teaching schedule to teach at the magnet school, and several professional artists who are invited for short residencies.

Art students keep sketch books as an important tool for learning to observe and record impressions and as a resource of ideas for drawing, painting, and sculpture. Exhibits of student art work are arranged in the school and in banks, libraries, colleges, and other local community agencies. The art department developed a form to record student progress in art making, leadership, attitudes, work habits, interests, academic achievement, abstract thinking, and creativity. Through these data, the schools are documenting the value of early identification of talent and enriched education in the visual and performing arts (Clark & Zimmerman, 1982; Raichle, 1983).

Residential arts schools for the full academic year include privately supported boarding schools for the arts and state-supported arts schools. Attendance often is selective and is not confined to school district boundaries. Rigorous academic and specialized art curricula characterize these kind of schools. Students are required to live away from their homes and tuition fees are paid by their families or subsidized by scholarships.

Interlochen Arts Academy's Year Round Residential School

Founded over 65 years ago, as part of the Interlochen Center for the Arts, the Interlochen Arts Academy, in north central Michigan, is a private, year-round, secondary, college preparatory school that offers major programs in creative writing, dance, music, theater, theater design and production, and the visual arts. Interlochen offers talented young artists, musicians, dancers, actors, and writers opportunities to explore and develop their special art abilities. In addition, the Interlochen Center for the Arts offers a resident program in music and the visual arts for upper elementary through high school students in the summer.

The Interlochen Arts Academy visual arts program includes separate departments and studios for drawing, painting, printmaking, ceramics, sculpture, metalsmithing, weaving, and photography. The gallery is an exhibition space where students, faculty, and guests exhibit their work. Although Interlochen Arts Academy is in a relatively isolated part of Michigan, students are able to experience the arts first hand through frequent visits by guest artists who come regularly to Interlochen to present special programs, demonstrate art making techniques, and teach master classes. There are over 70 full-time faculty on the

Interlochen staff, and because Interlochen is a residential school, there also is a full-time resident staff.

Visual arts students, who apply to the Interlochen Arts Academy submit a portfolio of art work that can include original work and/or slides. Admission criteria for all art students included evidence of: (1) interest, talent, or experience in one or more of the fine arts, (2) high standardized aptitude and achievement test scores, (3) past school achievement, (4) good physical health, and (5) positive attitudes, citizenship, and self-discipline (Clark & Zimmerman, 1984c).

Many communities offer *extra school, nonresidential arts centers* that meet for all or part of the academic year and offer programs for artistically gifted and talented students. These programs may be offered at school sites, museums, community centers, or other local facilities with a specialized staff that serves students during some part of the school day. Students often take academic courses in their regular schools and also travel to an extra school site for specialized art experiences.

Modoc, Indiana's Extra School Program

Although much is known about the pyramids of Egypt and Stonehenge in England, little recognition is given to the importance of earthworks and artifacts left behind by prehistoric peoples of North America. In a special program for 15 artistically gifted and talented students in rural Union Junior High School in Modoc, Indiana, highly able visual arts students studied about the Serpent Mound in southwestern Ohio. Students who participated in this program were identified as artistically gifted and talented. Most of these students also were enrolled in an academically gifted and talented program in the school. Classes met for nine weeks, two hours a week, as did other visual arts classes in the junior high school.

In this special program, students viewed slides and identified observable characteristics of the Serpent Mound. They postulated the significance of the serpent symbol and its relationship to a nearby river and other significant geographic features. Then, in small groups, they prepared statements to support their postulations. Selected readings that the students had done previously helped to prepare them for these discussions. Students were next regrouped to share their conclusions. After previewing the Mound site, students took a field trip to the Serpent Mound itself and created an experimental group map of the Mound site so they could experience first-hand, through observation, relationships of the serpent, the direction of the serpent, the site selected for the serpent, and surrounding mounds. Students also visited a mound that was being excavated by a local archeologist, and discussed cosmology and its implications of intentionality of the mound builders in relation to time and direction.

Back in their classroom, the students viewed a video tape about Adena and Hopewell mound people and related their experiences at the Serpent Mound to the architecture of these peoples and to other mound sites. Following this discussion, students examined Native American lifeways prior to Columbus' arrival in the New World and discussed issues about "rights" to the burial remains of the Adena and Hopewell mounds. Students learned that as the world moves toward a global village, they should learn to understand and respect values different from their own. Then, analysis of contemporary earthworks, by artists Nancy Holt and Robert Smithson, were used as comparative studies of motifs in prehistoric mound structures to help students make connections between past and contemporary cultures. This special program for artistically gifted and talented students was finalized in a "site specific" piece created by the entire group. The central concept, location, and details of this construction were carefully recorded and discussed with interested members of the school and community (Mullins, 1993).

The most common type of ability grouping for artistically gifted and talented students are *residential arts schools* held during the summer months that most often take place on college or university campuses. These usually are intensive, immersion programs that meet the entire day and require students to become deeply involved in what they are studying. These schools draw their populations from district, state, national, or international sources. Tuition and residency fees usually are charged, although scholarships often are available to offset such costs.

University of Iowa's Summer High School Art Workshop

The Summer High School Art Workshop at the University of Iowa, Iowa City, initiated in the early 1980s, is based on the tradition of professional artists who spend their summers in a community artists' retreat, such as Yaddo in Saratoga Springs, New York and Haystack Mountain School of Crafts in Deer Isle, Maine. To foster a sense of community, registration is limited to 20 students who work together in studios, attend lectures, live and eat in a university dormitory, and participate in social events for two intensive weeks. Unlike some programs for artistically gifted and talented students, self-nomination and commitment to art are emphasized. Students submit portfolios of recent art work as visual evidence, not of facility, but of sustained interest in art. These portfolios are accompanied by essays about their interests and experiences in art, with emphasis on particular studio areas.

At the workshop, students meet for two hours of studio work in drawing and one in art history. Before students come to the workshop, they are urged to collect stories from their pasts that hold personal meaning for them, write them down, and bring them to their drawing class. These stories then become the bases for their art-making experiences. Art history sessions focus on learning about history and beliefs of people by studying their visual traditions, and on understanding a visual context for their own art work.

In the afternoons, the students choose a studio area of interest of either ceramics, photography, printmaking, or sculpture. Evening sessions feature lectures, discussions with graduate art students, and elective studio work time. Graduate students in art education, art history, and studio art serve as faculty and residence hall counselors for the workshop. The high school students learn from them not only possibilities for thinking about and making art, but also about the possibilities of life as a serious art student. The workshop culminates with an exhibit of the students' work displayed in the Iowa High School Art Gallery at the Iowa Memorial Union. A reception for the public as well as students and their families celebrates the exhibition's opening (Zurmuehlen, 1991).

A number of *arts programs and other services* are provided for students with high abilities in the arts by agencies other than schools. Options from these agencies can vary from a private gallery that shows students' works to museum-based programs.

Archer M. Huntington Art Galley's Museum Program

The education staff of the Archer M. Huntington Art Galley, Austin, Texas, and the Austin Independent School District, have worked together to provide an arts enrichment program for gifted and talented elementary students. Many children go to an art museum with their class and attempt to see all of a museum's collection in one visit. Few art teachers take the opportunity to use a museum as part of their curricula. Art museums can be powerful educational resources that cannot be duplicated in classrooms, because they can provide in-depth understanding of the art work in a museum's collection. The education staff at the Huntington Art Gallery believe that artistically gifted and talented students need repeated experiences and stimulating instructors when attending programs related to their museum's art collection.

Following guidelines used by the Austin Schools, gifted and talented students were selected for a series of museum visits. In-school experiences, before and after visits to special exhibitions, were an integral part of the program. Both school and museum personnel initiated goals and objectives. The resulting program is a year-long series of monthly museum visits and carefully structured preparation and follow-up experiences.

The curriculum in this program is guided by concepts and resources in the museum's exhibitions. Preparation materials and previsit lessons enable a school art teacher to motivate students' interests in specific exhibits. Visuals related to exhibits help students look and talk about art works and compare these works with others they have seen in the past. At the museum, students interact with artists and museum personnel. Follow-up visits include studio activities in similar media or based on themes around which exhibits have been organized. This art enrichment program is not product oriented; its major focus is understanding major ideas and techniques related to the world of art (Clark & Zimmerman, 1984b).

Acceleration

A frequently cited definition of *acceleration* is progress through an education program at a faster rate or a younger age than the norm (Pressey, 1949). Slavin (1990b) described three kinds of acceleration: (1) high school advanced placement courses, (2) middle and senior high school advanced courses with differentiated curricula, and (3) elementary school programs in which students stay in one grade and go to other grades for advanced education in specific subjects, along with homogeneous grouping. Maker (1986) added a qualification that extends the definition of *acceleration* by explaining that rapidly paced materials must meet the needs of those students who learn quickly. Stanley (1977) listed nine different, common administrative arrangements for acceleration: early entrance into school, early exit from school, skipping grades, taking senior level courses in earlier grades, completing two or more years of study of a subject in one year, use of mentors, obtaining college credit through examination, taking college level correspondence courses, and attending private schools with distinct social or athletic advantages over public schools.

Decades of writing in response to acceleration programs for gifted and talented students have warned about social, emotional, and other adjustment problems of students in such programs. Several educators have reviewed research and practices about effects of acceleration and have concluded that these anticipated social and emotional problems are unfounded (Benbow & Stanley, 1983b; Daurio, 1979; Janos & Robinson, 1985; Marland, 1972; Solano & George, 1976). In fact, Daurio (1979) observed that concern for social maladjustment among accelerated students is excessive and unjustified. There is not enough concern expressed about probable educational maladjustment among gifted and talented students due to inadequate educational challenges. Some educators have expressed concerns about content learned in accelerated programs because such programs may fail to provide experience with standard curricula for highly able students. Claims about acceleration programs creating skill gaps in core areas of a curriculum, however, have not been verified by research (Daurio, 1979; Pressey, 1949).

VanTassel-Baska (1986) contended, in defense of acceleration, that it is a highly effective intervention technique that improves motivation, confidence, and scholarship; prevents habits of laziness, allows for earlier completion of professional education, and reduces the total costs of a student's education. Stanley (1977) reiterated similar justifications for acceleration and added that acceleration programs reduce egotism and arrogance by placing students with others of equal or superior abilities, provide more time to explore careers, create better preparation for advanced study in college, and benefit society by providing more years in a chosen profession and by creating better citizens with better education. Benbow and Stanley (1983b) also pointed out that students in accelerated programs are provided greater opportunities to interact with professionals in their chosen fields.

Rogers' (1991) meta-analyses of previous studies with gifted and talented students has demonstrated that grouping for curricula acceleration for high ability students produces substantial academic gains in program options, such as nongraded classrooms, curriculum compacting, grade telescoping (rapid progress at junior and senior high school levels), subject acceleration, and early admissions to college. She also found moderate academic gains for Advanced Placement courses and only small gains for socialization and psychological adjustment, including no effects, positive or negative, on development of self-esteem. In general, Rogers (1991) found strong support for academic effects of enrichment, ability grouping, and acceleration. She claimed more research is needed to study and report effects of various program options on students' socialization and psychological adjustment.

An advantage of acceleration is that it requires a minimum of expenditures and can be used in most school settings. There usually are no special procedures required and no special classes or materials are needed. Accelerated students usually are less bored in advanced classes than in their regular classes and acceleration permits students to progress at their own rates and enter their chosen fields earlier than other students.

Most acceleration of art students occurs in nongraded groupings in out-of-school programs (Clark & Zimmerman, 1984a). Accelerated arts programs in schools are not common because they are dependent upon graded, sequential curricula that allow students to progress at faster rates than other students through pre-scheduled learning activities. Most programs for artistically talented students do not have developed, sequential curricula and, therefore, students cannot be guided through acceleration opportunities or in-depth approaches. An exception is offered in schools with Advanced Placement (AP) and International Baccalaureate (IB) art courses for high school students administered by the college entrance examination board.

Any school in the United States can participate in the Advanced Placement programs in art history, general art studio, and drawing courses. Even in small communities with no colleges nearby, it is possible to offer courses leading to college credit by examination. These programs are intended to provide experiences at college and professional art school levels for high school students who intend to transfer credits earned to an institution of higher education. Teachers prepare to offer courses by studying AP curricula, enroll in Summer AP institutes, or by attending AP conferences and workshops. Advantages are that AP exams are less expensive than tuition and other costs at state universities. Universities sometimes offer coursework in high schools, taught by specially educated teachers, for which students receive credits when they enroll in participating universities (Daniel & Cox, 1985).

In the 1992 and 1993 Advanced Placement Program Summary reports in art history, drawing, and general art exams, it was noted that from 1992 to 1993, there was a 9% increase in the number of students taking exams in all three art areas. In total, for 1993, 4,708 students took the art history exam, 1,922 took the art-drawing exam, and 4,207 took the art-general exam (Advanced Placement Program, 1993). According to Hurwitz (1983), AP programs in public and private high schools reflect a number of administrative arrangements, including: (1) informal tutoring between one or two students and a teacher, (2) selected grouping within regular art classes, (3) special classes that meet as a distinct group, and (4) programs created in conjunction with museums.

Winnetka, Illinois' Advanced Placement Program

New Trier Township High School, a public school on two campuses in Winnetka, Illinois, has had an academic gifted and talented program since 1955. This gifted and talented program offers special classes in many subjects that focus upon Advanced Placement (AP) courses. In 1979, an AP Studio Art course was established to meet the needs of highly gifted and talented twelfth grade art students. A strength of the program is a student's opportunity to pursue one art discipline, for three years, in advanced investigation. In their senior year, students can enroll in the AP Studio Art class forum where they can explore common concerns and share ideas and techniques.

Many students who enrolled in AP courses receive entrance credit and advanced standing when they attend art schools or colleges. Students have expressed positive feelings about themselves and their art work as a result of taking the AP Art Studio courses that are supported by the school and the community. The AP Art Studio course requires students to spend 40 minutes a day in an AP art class and at least 40 minutes per day in another studio class with a different teacher. Some students supplement their school experiences with classes in extension programs or other community-based art classes. Most AP art coursework focuses on studio art experiences, slide lectures, and problem solving. Students are required to interpret and critique major art concepts as studio projects. Building a professional art vocabulary and strengthening intellectual conceptualizations about art are major goals of the AP art program.

Field trips to local galleries and private collections, drawing expeditions to local sites, and research about art careers also are course requirements. Students are expected to maintain throughout the year, a sketchbook/journal that includes reviews of exhibits, photographs, memorabilia, notes, and drawings. At the end of the school year, a festival is held in which all portfolios are displayed and student media and technique demonstrations take place. Visitors are encouraged to engage in conversation with the AP art students.

As an example, the photography program offers a sequence of four courses that can lead to enrollment in an AP art course that stresses supervised independent work, self-evaluation, and portfolio preparation. In the introductory photography course, students learn basic camera and darkroom techniques; the intermediate course develops advanced creative photography skills and camera and darkroom techniques; another advanced course explores photographic exposure, preparation of individual portfolios, and commercial techniques required in studio portrait and still life photography. Many of the advanced students participate in related school activities such as participating in the publication of the school newspaper, yearbook, or literary/art magazine. Advanced students use the laboratories in their free time and can borrow special equipment (Clark & Zimmerman, 1983a; Currie, 1983).

While the Advanced Placement Program is based on first-year college work in the United States; the International Baccalaureate (IB) program is designed more to prepare students to attend international universities (Freeman, 1987). The IB program is based on a set of exams prepared and graded in Geneva, Switzerland. IB students take examinations and courses in six subject areas. In addition, IB students take a course in the theory of knowledge in which critical thinking and philosophy are combined. Candidates also are required to complete an extended essay, based on an independent research project, and participate in some form of creative or social services project (Daniel & Cox, 1985; Focus and Higher Standards for Secondary Schools, 1983; Freeman, 1987).

According to Freeman (1987), the IB was originally designed to be a standard curriculum by which students living in various countries all over the world could meet graduation requirements in their own countries. Presently, in the United States, it is most often offered as an honors curriculum. IB students can receive up to one year's credit in American colleges. Implementing the IB requires commitment of time and funding. In 1987, 120 schools in the United States and Canada offered the program. Daniel and Cox (1985) caution that implementation of programs such as AP and IB need to proceed one step at a time. A school's whole academic program needs to be considered to keep the entire curriculum in balance. In art, as in other subjects, students who display competencies do not need more assigned activities requiring the same competencies; they need to be accelerated and move ahead to more demanding and rewarding experiences that require more problem solving and more complex and abstract thinking in the arts.

Research About Programming Opportunities for Students Gifted and Talented in the Visual Arts

There is considerable research about programming opportunities for gifted and talented students with high academic abilities as evidenced by the recent publications from The National Research Center on the Gifted and Talented by Rogers (1991), *The Relationship of Grouping Practices to the Education of the Gifted and Talented Learner*; Robinson (1991), *Cooperative Learning and the Academically Talented Student*; and Kulik (1992), *An Analysis of the Research on Ability Grouping: Historical and Contemporary Perspectives.* There is a paucity of research, however, about programming opportunities for students gifted and talented in the visual arts, especially in the most popular practice of mixed-ability grouping. Findings will be presented for the relatively few studies that have been conducted about ability grouping and acceleration program options reported as national surveys, case studies, and program evaluation studies. These have contributed some data about the effectiveness of current programming opportunities for gifted and talented students in the visual arts.

National Surveys

To what extent are the previously discussed programming opportunities, such as mixed-ability, ability, and acceleration options, used in schools in the United States? Contemporary answers are difficult to establish because there is so little research about gifted and talented students in the visual arts and their schooling. What contemporary information we have has come from studies carried out in the 1980s. National surveys of programs for students with high abilities in the visual arts offer descriptive, demographic baseline data about the nature of programming opportunities, including such program factors as size, purpose, design, selection, curriculum, funding, time allotments, and arts requirements (Bachtel-Nash, 1984; Leonhard, 1991). A few individualized program descriptions and/or statistical comparisons across programs are offered, analyzed, and interpreted to provide a picture of the status quo of programming opportunities for artistically talented students in the visual arts (Bachtel, 1988; Bachtel-Nash, 1984; Clark & Zimmerman, 1984a, 1987a; Leonhard, 1991).

Clark and Zimmerman (1984a), from 1983 to 1984, surveyed 50 visual arts programs at elementary and secondary levels and described many school-based programs, including summer school, school-museum, magnet school, and public school arrangements for students gifted and talented in the visual arts. They found an average of two different kinds of administrative arrangements used in any program and a total of 76 instances of various kinds of arrangements. The largest number of programs (30%) were offered as out-of-school opportunities. Specialized schools, mostly at the junior high and high school levels (e.g., cluster and magnet schools), were the most popular option offered by school districts (18%); most of these were arts magnet schools. Pull-out classes were reported by 13% of the respondents. There were no reports of grade skipping, early admissions, or credit by examination; however, some of these options are used often in programs for academically gifted and talented students.

Most programs reviewed did not report using mixed-ability grouping or in-class enrichment. Most programs for gifted and talented students in the visual arts did not have sequential curricula and, therefore, were unable to guide students through acceleration opportunities. One exception was Advanced Placement high school art courses, offered in 7% of the programs reviewed. A variety of forms of ability grouping were reported as out-of-school activities that took place in museums, summer schools, and Saturday classes.

In 1983-1984, Bachtel-Nash (1984) also conducted an extensive survey reported in a *National Directory of Programs for K-12 Artistically Gifted and Talented Students*. She surveyed administrators of State Departments of Education and administrators of individual programs for students gifted and talented in the visual and performing arts. She also made contact with other sources, such as national organizations, professional publications, and professional educators. Bachtel-Nash reported information about a total of 233 programs, but did not analyze or interpret the data. Clark and Zimmerman (1987a) subsequently combined their data and Bachtel-Nash's 1984 survey data and found that within all of the states, there were 52 arts magnet schools supported by local or regional educational agencies, 64 summer programs, 98 local school district programs within the school year, 9 private programs, and 7 Saturday School programs.

In 1988, Bachtel conducted another survey about identification and selection processes involved in current, K-12 programs in the United States for students gifted and talented in the visual and performing arts. In her report of this survey research, she reviewed responses from 141 program administrators (based on responses from programs described earlier in her's and Clark and Zimmerman's 1984 surveys and from members of Arts Magnet Network who responded to her questionnaire). There were visual arts components in 114 (81%) of the programs she reported, but only 10.7% of the programs were exclusively visual arts programs. Dance, drama, music, and visual arts programs were offered by 56% of the sample. Programming options available in all of the arts programs surveyed included classes (96.5%), visiting artists (69.5%), field trips (66.7%), private lessons (34%), mentors (27.7%), and other options (14.9%).

Leonhard reported results of a 1990-1991 survey about the status of educational programs for visual and performing arts students across the country. Much of the information revealed in this report was entirely new; educators simply had no access to such information prior to this research, at least not since publication in 1963 (28 years earlier) of the National Education Association (NEA) Research Division report about *Music and Art in the Public Schools*. In respect to educating students gifted and talented in the visual and performing arts, Leonhard's (1991) report revealed that, among the 1,326 schools that returned survey instruments, small middle schools, large middle schools, secondary schools, and large secondary schools all reported different data.

In *small middle schools*, offering classes for gifted and talented students is not the mode; only 5 of 29 schools (17%) do so. Arts programs were offered, in order of frequency, in the visual arts (3 schools), music (1 school), theater/drama (1 school), and none of the schools offered a dance program. Offering classes for gifted and talented also is not common in *large middle schools.* General arts programs were offered in the following percentages of schools: visual arts, 18.4%; music, 18.4%; theater/drama, 9.3%; and dance, 4.1%. Classes for gifted and talented arts students also are not the mode in *small secondary schools.* Arts programs were only available to students in, by percentage, visual arts, 15.8%; music, 13.5%; theater/drama, 7.3%; and dance, 2.4%. Classes for gifted and talented arts students were more common in *large secondary schools* and arts classes were even more common. Classes were offered in, by percentage, visual arts, 40.7%; music, 25.9%; theater/drama, 15.9%; dance, 11.1%.

According to Leonhard, administrators in schools with visual arts programs seemed more concerned about gifted and talented education than administrators in schools without a visual arts program. Schools with a gifted and talented program, that included the arts, were most likely to have general classes in the visual arts than those that did not offer such program options. These findings could be read another way; schools offering program options for gifted and talented students also were those that were most inclined to offer program options for arts students.

Case Studies

There have been a number of contemporary case studies about the work of talented students who evidenced precocious abilities in the visual arts (Bloom, 1985; Gardner, 1980; Goldsmith, 1992; Golomb, 1992a, 1992b; Nelson & Janzen, 1990; Robertson, 1987; Zimmerman, 1992, in press). Most of these studies emphasized spontaneous art work done by precocious youngsters from their early childhood through their adolescence or were focused on separate time periods during their development as young artists. The following summaries of eight case studies include discussions of how educational provisions affected students who evidenced advanced art abilities in their childhoods. Some of these case studies focused on the unfolding of art talent without interference from art teachers in formal educational settings; others emphasized enriched and accelerated programming opportunities and alternatives as very influential on development of visual arts talent. An argument will be made for the need for enriched and accelerated programming opportunities for artistically gifted and talented students.

Without Formal Instruction "Feeling His Own Destiny"

In *Artful Scribbles* (1980), Gardner presented a case study of spontaneous drawings of a 16-year-old artistically gifted and talented adolescent, Gabriel Foreman, who was serious about his art interests and influenced to a great extent by popular culture. According to Gardner, formal art instruction was limited and did not play a major role in Gabriel's development. This talented young artist, however, grew up in an environment that was very supportive of the arts. Both his parents are painters who exhibit their work and earn their livings as graphic artists. Gardner discussed Gabriel's cautious reaction to formal art lessons and stated that he preferred to "feel out his artistic destiny on his own" because many of his teachers were "of indifferent quality and may have discouraged rather than enlightened him" (p. 245). An informal art education was gained at home under the tutelage of his parents. Going to museums and being immersed in the world of art was not of primary concern to Gabriel. Although Gardner did not find formal art instruction to have much impact on Gabriel's art development, he concluded that a person needs more than a supportive environment to be successful in art; he or she needs "tenacity, willingness to overcome obstacles, [and] the desire to succeed" (p. 251).

Formal Instruction as an Inhibiting Factor

Robertson (1987) reported a case study of her son Bruce's spontaneous drawings from ages 6 to 16. In this study, she intimated that formal art instruction, rather than supporting Bruce's art development, might have been an inhibiting factor. As an art teacher and researcher, she was in a unique position to observe and have conversations with her son about how and why he created his drawings. This case study was focused on his graphic images that emerged at puberty in the form of human figures drawn in a cartoon-like style. This form of expression met Bruce's need to express central themes of importance to him such as power, violence, family, cultural influences, and teenage subculture including sex, drugs, and rock and roll. Robertson claimed that these themes were a "self-reflective dialogue with himself, producing a visual journal recording of his evolving concept as an artist" (p. 40). Continuity of drawing practice, motivation to sustain such practice, personality, environment, and family support were credited as factors that influenced Bruce to continue drawing into his adolescent years. "Although aesthetic quality of fine arts models" (p. 44) may be valued by art educators, Robertson warned that teaching techniques without engaging adolescents in meaningful expression through popular culture may result in "mediocre and trivial" art work (p. 44).

Father as a Guide and Mentor

In a case study reported by Goldsmith (1992), formal art lessons or directed art experiences were viewed by a parent as inhibiting the visual art development of artistically gifted and talented students and this supports findings by Gardner (1980) and Robertson (1987). Goldsmith discussed style development in the work of Wang Yani, a Chinese painting prodigy, during the time she was 3 through 12 years old. Yani was greatly influenced in her art development by her father, a painter, who acted as her guide and mentor. His stated position was that Yani should have no formal art lessons, either privately or in school, but he appears to have guided her development to a significant degree. He encouraged her budding art talent and gave her free reign of his art studio to experiment and paint. At the time Goldsmith studied Yani's stylistic development, Yani had yet to integrate her more formal development and acquired technical skills with her evolving, more mature, thoughts and feelings.

Guiding Their Own Graphic Development

In *The Child's Conception of a Pictorial World*, Golomb (1992a) described three case studies of Israeli children whom she considered gifted child artists. Two of the children grew up in an Israeli kibbutz and both studied art and chose adult vocations in the arts. A third child grew up on a moshav, an industrial cooperative settlement in Israel, and, when in high school, was considering a vocation in the arts. Golomb contended that all three of these students, who exhibited high abilities in the visual arts, had "guided their own graphic development" (p. 252). Golomb's sources of data were interviews with the students when they were in late adolescence, longitudinal studies of the students' drawings from early childhood to young adulthood, and interviews with a parent of the student raised on a moshav and with a teacher of the two children raised on a kibbutz.

The kibbutz teacher, Malka Haas, collected the drawings of the two kibbutz students and influenced and encouraged their talents. As part of her teaching, she maintained an open studio in her classroom where students could do art work when they had free time. According to Golomb, Haas condemned what she felt was mindless copying and felt that directive instruction hindered normal art development and individual expression. Haas also believed the purpose of art teaching was to help students have healthy personalities and be well adjusted, and their development in the visual arts would best proceed without directive instruction until they were young adults.

Lack of Availability of Program Opportunities

In the book, *Developing Talent in Young People*, Bloom (1985) and his associates reported their examination of processes by which talented individuals, before the age of 35, reach high levels of accomplishment in their respective fields. The authors felt the information they sought about developing talents in young people could be secured with retrospective accounts of those people who had already demonstrated very high levels of achievement, and those who helped them, in a number of selected fields. They studied the histories of these individuals through interviews with the subjects, their parents and siblings, and their coaches, mentors, and teachers. This report included two art groups, 24 concert pianists and 20 sculptors, as well as others honored for world class achievements in science, mathematics, and sports.

In respect to the sculptors, Sloane and Sosniak (1985) concluded that the sculptors' program opportunities and alternatives during elementary school years took the form of a variety of out-of-school options. One educational option conspicuously absent, however, was regularly scheduled art classes. Four sculptors, out of the 20 interviewed, attended some kinds of art classes outside of their regular school programs. The experiences they recalled, and their short duration, did not qualify these as art instruction classes at any serious levels.

Sloane and Sosniak speculated that this absence of out-of-school art classes had more to do with lack of availability, as compared to out-of-school music classes, than with choices by the students or their parents. Private art instruction, both individually and in groups, was not easily accessible to them. The art experiences all of the sculptors remembered in their elementary schools' art classes were recalled as noninstructional and without having any direct relationship with the world of art and artists.

At the high school level, 14 of the 20 sculptors recalled having some sort of art instruction. The remaining sculptors had no art instruction or classes they could remember at the secondary level. Those who recalled secondary classes remembered that art was not considered an academic subject. Their teachers in classes, they recalled, were not artists and treated art making only as crafts. Although these sculptors had some art education experiences as adolescents, they had "little experience with the study of art and an equally limited idea of what such study might include" (Sloane & Sosniak, 1985, p. 116).

A Teacher Who Encouraged Art Talent

Wilson and Wilson (1980) studied the graphic art work of a 15 year old, John Scott, and his ability to construct symbols through graphic narratives that took the form of a ten-part epic saga. They credit John's teacher with encouraging and nurturing his talents by stressing the value of popular, narrative models rather than emphasizing a fine arts model of instruction. John's art work was derived from graphic images found in comic books. Wilson and Wilson contended that young people who have mastered cultural conventions are most inventive and able to generate new graphic discoveries by working from their own graphic images. They concluded that "the act of generating visual images and the process of recording them graphically deserves more attention than art teachers give it" (p. 24).

Educational Opportunities in a Rural Context

Few researchers have studied the positive effects of accelerated or enriched art learning experiences on a student with high abilities in the visual arts or advocated these types of experiences after studying a student who possessed a great amount of art ability and talent. In an article by Nelson and Janzen (1990), "Diane: Dilemma of the Artistically Talented in Rural America," case study methodology was used to study "Diane" and educational opportunities and alternatives that were offered to her. Diane was described as having personality characteristics associated with students with high abilities in the visual arts, such as creativity, independence, nonconformity, tenacity, love of solitude, and low tolerance for boredom. Her elementary art classes were predominately cut-and-paste activities and Diane's reaction was boredom.

In seventh grade, based on her IQ score, she entered a gifted and talented program that offered out-of-school activities, including a program option which allowed her to study oil painting with a mentor. School classes still remained unchallenging for her, despite this alternative program. In high school, she became severely depressed and a psychologist recommended early college entrance. She went to college and earned high school credit for courses in which she was enrolled. Diane then went on to graduate after spending only three years in college. Her career plans, at the time this article was written, were to earn an MFA and become a college art instructor.

Important factors the authors believed helped Diane succeed in her rural environment were strong family support, a psychologist and a gifted and talented coordinator who encouraged appropriate educational options, and mentors in her junior high school art program. Other factors were the support she received in college and her own personality, that was described as stubborn with integrity and having a spirit of independence.

Impact of Accelerated and Enriched Curricula

In 1992c, Zimmerman published an article about factors influencing the graphic development of her son, Eric Zimmerman, through retrospective accounts and reactions to his spontaneous art work created from preschool until he was in the tenth grade. In this study, the impact of formal, educational opportunities on his art development were not considered. She found that factors of biology, family background, culture, skill mastery, personal disposition, and preferred subject matter contributed, to a great extent, to Eric's development. Many of the findings from this study supported claims by Gardner (1980), Goldsmith (1982), Robertson (1987), and Wilson and Wilson (1980). The major difference between Eric's graphic development and that reported by these authors is that Eric, like Diana in Nelson and Janzen's (1990) case study, participated in a variety of formal educational opportunities in both academic and art areas that greatly influenced his development in art.

Eric's accelerated and enriched educational opportunities were described in another article by Clark and Zimmerman, (1987b), in which they suggested that just as alternatives in educational planning to accelerate the education of mathematically precocious youth were successful (Stanley, 1977), so might enriched and accelerated education opportunities for artistically talented students be of value. This case study was conducted through interviews with Eric (referred to in the article as Harold) and observations by Eric's parents, the authors. Eric's first extraschool opportunity was to attend the Indiana University Summer Arts Institute for four consecutive summers, when he was 10 to 14 years old. This Institute was a residential program for students entering grades 7 through 11 who were gifted and talented in the visual arts. During those years, he also won awards in several local art contests. When he enrolled in his local high school, his accelerated schedule was too full to allow inclusion of an art class. He entered high school at the sophomore level, having taken freshman level classes in his junior high school. He was selected to attend gifted and talented honors classes in most academic subjects. In addition, he took college level courses in calculus and advanced physics that were taught at his high school. During his junior year, he took advanced drawing and painting classes in his high school where he excelled and was rewarded by winning several local and state art competitions.

He attended the Interlochen Center for the Arts for two summers on scholarships to study drawing, painting, and ceramics and to play recorder with a group of selected music students. In his senior year in high school, he attended high school classes in the morning and took four college level art classes at Indiana University during the afternoons. He won three state gold keys and two honorable mentions and a national gold key honorable mention in the Scholastic Art competition. At the same time, he also was honored for his independent Science Fair project about perception and organization of colors by American and international students and was selected as one of two state-level Science Fair winners. "Harold" also was active in his high school's music program and was selected to play in an all-state orchestra. In addition he studied playing the recorder with a private teacher and performed regularly as a member of a Baroque recorder quartet. The summer before his junior year, "Harold" attended a college credit painting course for high school seniors at Indiana University. This fast-paced class, taught by a college art professor, covered a college semester's content in three weeks of intensive studio work. At the time this article was written, "Harold" was planning to attend college on a scholarship and study fine arts. Clark and Zimmerman (1987b) concluded the case study of "Harold" was a major step in demonstrating the success of various accelerated programming opportunities and alternatives for students gifted and talented in the visual and performing arts.

In the most recent case study of Eric, (Zimmerman, in press), the impact of accelerated and enriched art experiences on his art development, in-school and out-of-school, was presented through accounts of reactions to his art work created in formal art instruction situations. Major sources of data included audiotapes of conversation between Eric and the author, art works, school notebooks, and written class work. Content analysis was used to discover themes and their meanings and comparative analysis was used to interrelate themes through Eric's discussion and reactions to his art works. An ethnographic case study approach to the data was emphasized in which educational implications were drawn from themes which emerged from the data. In this study, Eric's positive reports about the benefits of accelerated and enriched art program opportunities for study in the visual arts echoes VanTassel-Baska's (1986, 1987) defense of acceleration for high ability students as a very effective intervention technique that improves motivation, confidence, scholarship, prevents habits of laziness, and allows for earlier completion of professional education. Benbow and Stanley (1983a) also asserted that acceleration opportunities for high ability students provide greater opportunities for these students to interact with professionals in fields in which they have particular interests.

Sculptors in Bloom's (1985) study reported that at the secondary level, although they had some formal art experiences, they did not feel that they had been engaged in professional study in the world of art and regretted this omission. Gabriel Foreman (Gardner, 1980), Bruce Robertson (Robertson, 1987), and Wang Yani (Goldsmith, 1992) did not appear to have positive experiences with formal art education and were fortunate to have parents who nurtured their early art talent. The two students in Golomb's (1992a) study, who lived on a kibbutz, had a teacher who allowed them to learn on their own without intervention, except perhaps to supply materials and encourage their emerging talents. It was opportune that John Scott had a teacher who encouraged his visual narratives and allowed him to use subject matter in his art projects that was of interest to him. Diane, in

Nelson and Janzen's (1990) case study, was a student with high ability in visual art, who like Eric, profited from enriched and accelerated visual arts programs. Feldman (1980) and Feldman and Goldsmith (1986) studied children who were prodigious in many different areas, including chess, musical performance, music composition, writing, and foreign languages, and are convinced that all progress in learning is the result of intensive and prolonged instruction and successful teaching. Their conclusion, that an individual's talent within a culture involves the interplay of many forces including education, has great relevance for the education of high ability visual arts students.

Teacher encouragement and flexibility were relevant to Eric's feelings of being successful and challenged. Those art teachers Eric viewed positively possessed important characteristics, such as their emphasis on art skills and concepts, knowledge about art, empathy with students, ability to make classes challenging and interesting, and desire to help students become aware of the contexts in which they make art, and to examine their reasons for creating art. These characteristics are similar to those of successful teachers of talented adolescents studied at the Indiana University Summer Arts Institute (Zimmerman, 1991b, 1992b).

Zimmerman (in press) concluded that accelerated and enriched art program options offered to Eric throughout his elementary and high school years provided impetus for him to continue his art study and become a practicing artist, using technology today to solve the same problems he grappled with as a talented adolescent. Studies by Gardner (1980), Goldsmith (1992), Golomb (1992b), Robertson (1987), and Wilson & Wilson (1980) presented cases that imply that children may develop best in art if they are left to their own devices and provided with art materials and emotional support from their teachers. This is a view of teaching art that pervaded the field of art education two decades ago (Eisner, 1974). The myth of a talented art student developing on his or her own, without educational intervention, is even more prevalent in gifted and talented literature today than in writings about art education (Clark & Zimmerman, 1984a, 1987b). Zimmerman (in press) asserted that art development should not be viewed as a consequence of maturation; it should be regarded rather as a learned set of abilities that to a large extent are greatly influenced by available educational opportunities, instruction, and the culture or cultures in which a person lives, studies, and works.

Local and Regional Program Evaluations

There are many program descriptions reported in journals and magazines about educational programming opportunities and alternatives for gifted and talented students in the arts (e.g., Carpenter, 1987; Gailbraith, 1985; Kaufmann, Tews & Milan, 1985; Wenner, 1990). Often these descriptions are intended solely to publicize the success of a program and the successes of students who attended the program. Such reports rarely provide analytic, critical, and evaluative or interpretive information about the programs described. There are, however, a number of evaluative research reports about educational programming opportunities and alternatives for students gifted and talented in the arts that have involved a variety of methodologies and data sources, such as standardized tests, local measures, focus groups, causal-comparative descriptions, surveys, or questionnaires.

The emphasis in all of the studies reported in the following summaries was ability grouping for enrichment. Most of the evaluative research was carried out by persons closely associated with the programs being evaluated. Even when outside evaluators were involved, almost all of the research has been reported as positive, even laudatory, and without criticism in respect to reforms or program improvements for future applications.

Project CREST (Connecticut)

Project CREST in Connecticut is an enrichment program for talented elementary school arts students that included museum trips, in-school and out-of-school performances, arts and crafts demonstrations, and artists-in-residence (Krause, 1987). The research involved in assessing this program included measuring students' creativity on a standardized test and interviewing students about their involvement with the program. The project was based upon Renzulli's Enrichment Triad Model and a goal was that students would participate in experiences related to the work of arts professionals in the real world.

Renzulli's Type I, Type II, and Type III enrichment activities form the basis of this educational program. All students at the school experienced Type I activities that included in- and out-of-school options such as visits to museums, libraries, and community centers; interacting with visiting artists; viewing demonstrations, exhibits, and performances; and attending a variety of cultural events. Type II activities were viewed as training activities for ability groups that included instruction in advanced uses of a variety of media and art techniques taught by professionals in the arts. Type III activities took the form of individual and small group projects in which selected students investigate real problems and exhibited and performed their own works. An independent evaluator reported that students over a three year period increased their creative abilities, as measured on the Torrance Tests of Creativity, and, during interviews, expressed feelings that they were more open to new experiences in the arts than before they entered the program.

Indiana University Summer Arts Institute

The Indiana University Summer Arts Institute was a residential, two-week summer program for students talented in the visual arts that took place from 1980 through 1990. Students attending the program were entering grades 7 through 11 the following fall semester. They were nominated by their local art teachers, based upon meeting criteria described by the Institute staff. Students attended from predominantly rural communities throughout Indiana and from several adjacent states and foreign countries. The research involved with this Institute used interviewing and focus group discussions to learn more about the students' views of themselves, their schools, their art studies, and their teachers, students, and the curricula at the Institute. In 1986 and 1987, 20 students attending this summer program were interviewed; these students represented a cross section of the Institutes' participants (Clark & Zimmerman, 1988).

Most students in this study reported that school offered them a place to socialize, but they did not have many friends with interests in the arts. This was especially true for students from rural areas who indicated that their regular schools offered them their only access to a social community. All participants in this study reported positive reactions to their schooling and were, by and large, excellent students in their respective schools. Seventy-five per cent of the students took art classes in their regular schools, but 25% reported they were advised they didn't have enough time in their schedules to take art classes in or out of school because of the pressures they felt they had to meet in order to complete their academic course work and requirements.

Students recognized major differences between classes at the Summer Arts Institute and their classes at their regular schools. Most students found the teachers at the Institute (1) challenged them more than those in their regular schools, (2) taught them to use new media, (3) made them think about what they were doing and to consider new ways of looking at things, (4) made them look more carefully and accurately, and (5) taught them to consider how to express themselves through careful use of techniques. Students were pleased to be grouped with others with similar abilities and interests in the arts. Most enjoyed working at a high level of difficulty, felt that they were doing better work than in their regular classrooms, and realized how much they learned in a short period of time. Many students expressed pleasure at the openness of conversations outside classes in which they shared ideas and critiqued each others' art work. A number of students expressed awareness of having learned a lot about themselves both socially and through learning new techniques and means of expression. Most students reported they were surrounded by other students of comparable or superior abilities and that they had to work hard to do well in relation to what the teachers expected of them and others. Most students mentioned that smaller classes encouraged better communication and instruction. As a result of attending the Institute they claimed to be more conscious of their own abilities and took advantage of the many university facilities available to them at this summer institute.

Summer High School Art Workshop at the University of Iowa

The Summer High School Art Workshop at the University of Iowa is a two-week residential program in the tradition of artists' retreats. Registration is limited to 20 talented high school students who are accepted into the workshop based on self-nomination and commitment to art. Workshop students come from both rural and urban areas in Iowa. During the 1989 workshop, Zurmuehlen (1991) interviewed each student individually about early art experiences, choices of art media, subject matter interests in his or her own work, and environmental influences. The interviews were tape recorded and transcribed.

Most of the workshop students had vivid and satisfying recollections of early art experiences. Support and recognition from families, teachers, and friends was evident by the first year of elementary school. Comments from peers, teachers, and family members made them feel, at a young age, that they were talented in art.

These workshop students identified with particular art media and subject matter choices. They articulated affinities for chosen art media, voicing criterion for their preferences akin to qualities discussed by professional artists that included consciousness of a medium's unique qualities and possibilities for expressing their own ideas through a particular medium. Many were able to trace their involvement with subject matter back to their personal histories, recalling early art and nonart experiences as a context for their continuing interest in a particular subject. In doing so, they were able to establish themes that were meaningful to them in their art work.

Accounts of school art experiences by these workshop students emphasized positive and negative influences with comparative frequency. For many, recognition of being the class or school artist was encouraging in respect to recognizing their art talents. Critical responses to school art experiences were directed toward assignments that were perceived as rigid and not creative. Most students favored a balance between assignments and being able to work independently. Like the talented students in Clark and Zimmerman's (1988) study, Zurmuehlen found that these young artists recognized differences between studying art at the workshop and their regular high school art classes. Although most perceived their high school art classes as beneficial because they could concentrate on art for longer blocks of time, they were stimulated and challenged by studying with other young people committed to art, found role models in the faculty who taught them, enjoyed opportunities to study original works of art in the museum and galleries on campus, and were challenged by the experience of taking responsibility for the content of their art work. Zurmuehlen recommended that artistically gifted and talented high school art students should be given extended time to work on art projects, study about media and subject matter that are meaningful to them, establish continuity in their art work by maintaining portfolios and exhibiting their work, and write reflections about their art work in progress and as completed projects.

Pennsylvania Governor's School for the Arts

Two research studies were reported in 1978 that focused on the Pennsylvania Governor's School for the Arts (PGSA). The purpose of one was to investigate whether participation in the 1976 Governor's School program affected changes in self-attitudes and leadership activities of students who attended classes in the visual and performing arts. The other described programs in five high schools for students talented in the arts with an emphasis on analyzing effectiveness of the program at the Pennsylvania Governor's School for the Arts.

Westfried (1978) administered a battery of tests to 260 students attending the PGSA, during a five week summer session, that measured their self-attitudes and leadership activities and how these were affected by attending the school's program. Results of analyses of the data obtained from the measurements used in this study revealed that the relatively brief experience of attending the PGSA had overall positive effects on self-esteem and leadership behaviors of those students selected for the program. Few of the gains were systematically consistent and a number of measures yielded negative gain scores. Results of statistical analyses of data obtained from measures used in this study demonstrated that the relatively brief experience that was offered in 1976 for artistically and creatively talented students in Pennsylvania by the PGSA, had an overall positive effect on self-attitudes and leadership behavior of those students who were selected for the 1976 program. At the same time, the data demonstrated that these effects, when analyzed carefully, were differential in nature (Westfried, 1978).

Clay (1976) set out with a major objective of assessing educational concepts and instructional strategies that would be most appropriate for the development of educational programs for artistically gifted and talented secondary students. The methodology used in this study was causal-comparative, descriptive research as described by Van Dalen (1962). Clay studied the PGSA's program and organization intensively, compared them with published United States Office of Education guidelines for education of gifted and talented students, and then compared the PGSA program with those of four other secondary schools for students gifted and talented in the arts. In doing so, he critiqued the PGSA program in relation to its flexibility, creativity, experimentation, individuality, humanism, relevancy, continuity, quality, and its identification and evaluation systems.

Unlike most program descriptions found in art education literature, this report contained critical examinations, critiques, and recommendations for changes in the PGSA program. In discussing selection of teachers, for instance, Clay noted that the PGSA would be strengthened by better teacher preparation in relation to meeting the needs of talented students. Teachers, he pointed out, were often chosen solely on the basis of their reputations and past experiences in traditional arts education settings. These criteria, Clay concluded, were not sufficient for selecting teachers for the PGSA program. Clay's report also contained many laudatory descriptions of the efforts of the PGSA to offer an experimental program for students gifted and talented in the arts. He completed his research report with a set of realistic proposals for attaining the expansive objective stated in his introduction that reflected both analyses and critiques found in his research.

Symposium for the Arts (New Jersey)

In a 1982 research study by Dorhout (1984), 60 gifted and talented art students were studied who attended 10 different elementary schools. Dorhout created a Symposium for the Arts in which 115 students, aged 6 to 12, from 16 school districts in a New Jersey county, interacted with professional artists and teachers for two days. Using a locally constructed instrument, pretest and posttest data were collected to compare effects of attending and participating in the Symposium. A significant correlation was found between concrete experiences with professional artists and attitudes towards the arts; participants reported that they enjoyed concrete experiences with artists, as offered at the Symposium, rather than vicarious experiences in the arts as offered in their regular schools.

Rural Alaskan Schools

The purpose of this study was to describe the administration of gifted education programs in rural Alaskan school districts for grades K through 6. For this research, a survey instrument was developed and mailed to a sample of 47 rural Alaskan school superintendents to determine the program options offered for gifted and talented students. A secondary purpose was to determine, from the survey data, successful programs and procedures currently adopted in rural Alaskan schools for gifted and talented students.

It was reported that successful programs appear to be those that combine both traditional, academically oriented curricula with more nontraditional offerings related to leadership, the arts, and native cultural and linguistic areas. Community mentors, interested teachers, and use of outside resources, such as fine arts and computer camps offered within Alaska, were reported to be the most effective means to achieve a diversity of program opportunities and alternatives for gifted and talented students in small, rural Alaskan schools (Lally, 1986).

East Tennessee State Fine Arts Program

The objective established for this study, conducted at East Tennessee State University, was to determine whether young talented students, who participated in a special fine arts program, would score significantly higher on pre and posttests of intelligence, language arts achievement, creativity, and personality, than young gifted and talented students who did not participate in the program. One hundred two students from kindergarten, first, second, and third grades were selected to participate on the basis of teachers' recommendations, and scores on intelligence, language arts achievement, and creativity tests. At the end of the study, 97 of these students completed posttests.

This study revealed that gifted and talented students in primary grades, who participated in a fine arts program for a minimum of one hour every week, scored significantly higher on tests of achievement and creativity than similar students who did not participate in the fine arts program. The study also revealed that students selected primarily on the basis of their pretest scores on a creativity test showed significantly higher increases in test scores of intelligence than students selected by pretests of intelligence or language arts achievement (Dillard, 1982).

Educational Center for the Arts

In 1988, James studied students who were selected for their talents in the visual and performing arts and enrolled for one or more years in the Educational Center for the Arts (ECA) in New Haven, Connecticut, while they also were attending regular high schools. The subjects in this qualitative study were former students of ECA; one group attended in 1974 and another attended in 1985. Comparison of these early and more recent subjects provided information about subjects' experiences at ECA and their later educational and career decisions. Students' experiences and perceptions were investigated through documentary materials, interviews with students, and questionnaires. The data included information about the subjects' families and home lives, early school experiences and activities, interests in the arts, private lessons, teachers and mentors, secondary school experiences, and influences they perceived on development of their talents, interests, and goals. All these were reported in relationship to the subjects' participation before, during, and after the Educational Center for the Arts program. James found a positive relationship between ECA experiences and art talent development with respect to later educational and career attitudes and decisions.

University of Texas Arts Enrichment Program

The University of Texas Arts Enrichment Program is a program option offered to 4th-, 5th-, and 6th-grade gifted and talented arts students. Over 300 students participated in the program in 1982. The core of this program and curriculum was a series of exhibitions at the Huntington Art Gallery on the campus of the University of Texas at Austin. The research for this program involved program evaluations collected through questionnaires and interviews. Several simple tests also were designed and administered to measure recall of vocabulary and images. A final exhibition of the participants' work, as well as work done in their sketchbooks, also was assessed as part of the program evaluation.

The goal of this program was to develop visual and aesthetic sensitivities and to increase abilities to talk about art and to make judgments about art. Preparation and follow-up lessons were taught with each museum visit. Flexible, multiage groupings were used and students were guided through exhibitions in groups of no more than 10 students. Museum docents were trained specifically to participate in this program. At the end of the program, each student received a specially designed sketchbook in which they were asked to recall and integrate concepts learned during the year.

On pretest and posttest measures, 89% of the participants increased their scores. Students from schools with a permanent art teacher, who also worked actively with the museum's art teacher, had the best scores. Participants in this program also showed gain scores in language skills and tasks with manual and aesthetic components (Mayer, 1982).

Johnson State College Early Summer Arts Programs

The purpose of the Johnson State College Early Summer Arts Programs in Vermont is to involve adolescents in college level courses for credit along with traditionally qualified college students (Confessore, 1991). The teachers are members of the arts faculty of the college, as well as professional actors, musicians, and dancers. Provisions are made for separate residence halls with resident supervisors and special leisure time activities. The students are enrolled in visual arts, theater, dance, and writing classes. In this research, a survey questionnaire, a self-directed learning readiness scale, and telephone interviews were used. This was a longitudinal study, conducted in 1989, of a 1981 group of 27 students, of whom 23 (93%) returned surveys. It was found that 78% still engaged in art related activities and claimed that art played an important role in their lives. In fact, 52% currently were pursuing art-related degree programs. Ninety one per cent of the subjects indicated that the original selection criteria for attending the earlier institute, such as initiative, desire to do art work, resourcefulness, and persistence, still applied to them. This group felt they were more self-directed than other adults and 78% claimed the program helped them confirm their identities as artists. As a group, they claimed they were meeting life's challenges positively and several reported they had overcome preexisting emotional challenges in their lives. During telephone interviews, respondents stressed that colleges should offer more opportunities for talented adolescents and use professional artists as teachers whenever possible. They also suggested that immediate follow-up programs are needed so participants do not feel imposed upon or isolated at the end of such an intensive summer session.

Authentic Assessment

Although traditional standardized testing is viewed by some educators as a political necessity and an opportunity to know how students achieve in terms of general aspects of education (Newman, 1990), assessment procedures that approximate real-life, authentic situations with integrated, complex, and challenging tasks can be in many situations, more appropriate to use to assess individual achievement and higher level thinking skills in the visual arts. If a goal of educating artistically gifted and talented students is to have students apply knowledge in different situations and employ what they have learned to create new understandings (Hiebart & Calfee, 1989), then authentic assessment of art learning that attends to real-life situations of making and responding to works of art is most appropriate. Also art learning through critical inquiry, problem solving, values clarification, and discovery learning often are best assessed through authentic means (Hamblen, 1988). Students differ in their interests, learning styles, rates of learning, motivation, work habits, and personalities as well as their ethnicity, sex, and social class, and it is these measures of diversity that standardized approaches to assessment often ignore (Gordon, 1977). Students with high abilities in the visual arts possess unique characteristics that should be taken into consideration when assessment procedures are being developed. Assessment measures should be used that are most appropriate for the situation being evaluated.

Measures of authentic assessment that have been demonstrated to be effective and correspond to Archbald and Newman's (1988) and Wiggins' (1989) criteria for authentic assessment include: (1) exhibiting of student work and performances, (2) portfolios of student work, (3) profiles of student behavior, (4) student reflective journals, (5) student interviews and questionnaires, (6) samples of student writing, (7) teach-back methods, (8) videotapes of student behaviors, and (9) immediate retrospective verbal reports. Zimmerman (1992a) used a variety of authentic assessment measures to evaluate student and program progress and achievement at the Indiana University Summer Arts Institute including journals kept by teachers and students, interviews with teachers and students, and evaluation forms filled out by teachers, students, parents, and counselors. These assessments provided much valuable information about how well goals set for the students and institute program were being met and how improvements could be made. She concluded that:

> If we aspire to teach all students equitably to be performing, thinking, problem solving, and inquiring individuals, then activities we teach and assess should be related authentically to some of these problems and experiences these students will encounter in their real worlds. (p. 24)

Summary and Conclusions

It is obvious and generally agreed upon, that high-achieving, gifted and talented science students need access to well equipped, up-to-date laboratories in which they can explore problems related to those that resemble the work of contemporary scientists. In much the same way, highly talented, gifted and talented visual arts students also need access to spaces and facilities that resemble those used to educate young artists in colleges or professional schools or resemble those studios of artists who are working to solve contemporary problems in the visual arts. Most public schools do not provide the background instruction, specialized equipment, appropriate work areas, or problems to be resolved for specialized study or advanced or accelerated levels in the visual arts. Open studios and private work areas encourage self-paced, accelerated learning; therefore, work spaces should be made available to students when they are not scheduled for required instruction. Students interested in studying art history, art criticism, or aesthetics at advanced levels also need access to professional-level books, slides, periodicals, and art reproductions, as well as appropriate work spaces that are related to and would support advanced or accelerated study and problem solving project work about nonstudio aspects of the visual arts (Clark & Zimmerman, 1987a).

Rogers (1991), based upon meta-analysis of research about grouping practices for the education of gifted and talented students, recommended that:

1. Students who are academically and intellectually gifted should spend a majority of their school days with others with similar abilities and interests.
2. Cluster grouping should be considered when schools cannot support a full-time program.
3. When no full-time gifted program is possible, gifted and talented students should be offered specific group instruction across grade levels, with cluster grouping, according to their ability levels.
4. Gifted/talented students should be offered a variety of appropriate acceleration-based options.
5. Gifted/talented students should be offered experiences that involve various forms of enrichment.
6. Mixed-ability, cooperative learning groups should be used sparingly for gifted and talented students, perhaps only for social skill development.

Available research about the education of gifted and talented students in the visual and performing arts also supports adoption of similar recommendations. There is no parallel foundation of research, however, on which to conduct meta-analysis research about programming opportunities for students gifted and talented in the visual or performing arts. There is an obvious need for such a foundation. The paucity of research currently available is a detriment to further progress in efforts to provide meaningful programming opportunities and alternatives for students gifted and talented in the visual and performing arts. Research also should be conducted to determine what programs are most successful for students from diverse economic, ethnic, cultural, and gender backgrounds. In addition, the effects of rural, urban, or suburban contexts in which students learn, need to be investigated.

There are many alternatives in educational planning, such as those described by Benbow and Stanley (1983a, 1983b), that have proven to be appropriate for high ability students. Acceleration programs in mathematics have proven to be successful due to the sequential nature of curricula in this area; art curricula, however, often are not ordered sequentially. Programs have been used effectively to accelerate the education of mathematically precocious youth, similar programs adapted for visual arts may prove to be equally appropriate for artistically talented students who also can be accelerated. Administrators of school-based programs for highly gifted art students should create a climate in which flexibility and alternatives in program planning are encouraged. Such students should be offered options that might include: (1) remaining in their school for part of the day and attending a nearby college or university for advanced art courses, (2) taking part in Advanced Placement arts courses offered in a high school that earn college credits, (3) enrolling in correspondence courses with college level art content, (4) attending fast-paced art courses in which curriculum compacting allows two years of course work to be covered in one year, (5) taking advantage of opportunities to bypass course prerequisites by examination, (6) earning full credit for courses by examination, and (7) going to high school only two or three years and entering college early (Clark & Zimmerman, 1987a). If at all possible, as students progress to higher levels of achievement in the visual arts, they should be encouraged to attend classes at advanced levels and study with mentor-artists so that their knowledge, skills, and values are developed beyond what normally would be possible in regular art classes in schools.

RECOMMENDATIONS ABOUT PROGRAMMING OPPORTUNITIES FOR TALENTED STUDENTS IN THE VISUAL ARTS

The following recommendations have been derived from review of issues and practices, and related research, about providing programming opportunities for students identified as gifted and talented in the visual arts. Each recommendation is followed by a brief discussion and suggestions for future research.

Recommendation One: There should be development of some agreed upon vocabulary of terms relative to programming opportunities for the education of students with high abilities in the visual arts.

Discussion: There is an abundance of disparate terminology being used to describe a relatively limited number of practices used to provide alternative program options for artistically gifted and talented students. As a result, there is confusion about terms and conflation of concepts related to these terms. In addition, language and concepts used in general gifted and talented education are not always directly relevant to issues and practices in education of highly able art students. Editors of major journals could lead in demanding consistent and economical usage of terms by writers reporting about programs or research for students gifted and talented in all aspects of education.

Recommendation Two: Research should be conducted to evaluate the effectiveness of programming options such as mixed-ability grouping, ability grouping, and acceleration as applied to students gifted and talented in the visual arts.

Discussion: There is a paucity of research to support decision making about programming opportunities and alternatives appropriate to the needs of students gifted and talented in the visual arts. In general gifted and talented literature there is a body of research and findings about the effects, advantages, and disadvantages of mixed-ability grouping, ability grouping, and acceleration opportunities for gifted and talented students. In the field of education for artistically talented students, no such body of research exists. Research that does exist often is focused upon characteristics such as self-esteem, leadership, inactivity, or intelligence and does not attend to content students are learning in areas of art making, art history, art criticism, and aesthetics. Therefore, no specific recommendations can be defended or justified, based upon research findings, for use with artistically gifted and talented students at this time. This is especially true about mixed-ability grouping in art education, although there have been some limited research studies about the effects of ability grouping and acceleration for artistically gifted and talented students. Further research and greater quantities of research are critically important at this time.

Recommendation Three: Universities and colleges and private, federal, and state agencies should be encouraged to support ongoing, large-scale survey research to address demographic issues about the nature of programming opportunities for high ability arts students, including size, purpose, design, selection, curriculum, funding, time allotments, and arts-related experiences being offered.

Discussion: There were a few survey research studies conducted in the 1980s that provided limited data about programming opportunities available to artistically gifted and talented students across the United States. These surveys, however, were not directed exclusively to reporting and clarifying alternative programs for students with high abilities in the visual arts. Instead, they addressed issues such as identification of students gifted and talented in the arts or description of general art education programs. There currently is little information available about many important factors needed to understand the nature and effectiveness of programming options being offered to students gifted and talented in the visual arts.

We suggest that colleges and universities offering gifted and talented education programs in the visual arts need to organize and support a major research effort to gather data and create a national data base about size, purpose, design, selection, curriculum, funding, time allotments, and arts-related experiences being offered to students with high abilities in the visual arts. Such a data base should be updated on a continual basis to supply current information and data for persons engaged in research about programming opportunities and alternatives for artistically gifted and talented students.

Recommendation Four: Evaluation studies need to be conducted, and results compared and contrasted, with respect to specific program options within mixed-ability grouping, ability grouping, and acceleration programs to help identify the most efficient and effective options appropriate to various contexts and diverse populations of students who are artistically gifted and talented.

Discussion: At the present time it is not possible to defend program options, such as a pull-out program or a mentoring program, based on research outcomes relevant to special needs of students who are gifted and talented in particular aspects of the visual arts. Such programming decisions currently are not being made on the basis of research findings, the specific needs of students, or the effectiveness of their teachers; rather, they are being made on the bases of expediency and administrative convenience. Research is needed to establish the educational efficiency and effectiveness of various programming opportunities and alternatives with respect to the educational needs of artistically gifted and talented students from different economic, ethnic, cultural, and gender backgrounds and who have studied in a variety of rural, urban, or suburban contexts. Outcomes of such studies need to be contrasted and compared so that relevant and appropriate decisions can be made based on cross-comparisons of similar programs across the United States and in other locales and countries.

Recommendation Five: More individual case studies, and the initiation of longitudinal research about large populations, are needed to create a basis for understanding which educational interventions are best suited for students with high abilities in the visual arts.

Discussion: Initiation of longitudinal research and more individual case studies about the effects of programming opportunities for artistically gifted and talented visual arts students are recommended to counter the paucity of information currently available. Not only should these studies be carried out separately, but comparisons of such studies with similar studies should be conducted to substantiate or refute research outcomes and armchair speculations. It will be only through group and case studies, in which a wide range of programming options are evaluated, that generalizations can be created about the best educational interventions for students with high abilities in the visual arts.

Recommendation Six: Authors of reports that include evaluation of programming opportunities for students with high abilities in the visual arts should adopt a standard practice of reporting a program's weaknesses, as well as its strengths, and such evaluations to be conducted, using authentic as well as standard measures, by persons not directly associated to the program being assessed.

Discussion: The vast majority of reports of contemporary educational interventions for students identified as artistically gifted and talented have been carried out and reported by persons closely associated with the programs. Very few of these reports have been critical of the programs being described and reported. Too often, those who have such a vested interest are concerned primarily with reporting a program's successes; obviously, they also should not be responsible for a program evaluation or assessment. The predictable result often is positive evaluations, even laudatory, without any criticism with respect to program improvements for future applications. Evaluation studies that are objective and use a variety of measures, including authentic ones, are needed to establish analytic, critical, and evaluative or interpretive information about programming opportunities. Case studies should also be conducted, in which a wide range of programming options are evaluated. The evaluation results should focus on the best educational interventions for students with high abilities in the visual arts.

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